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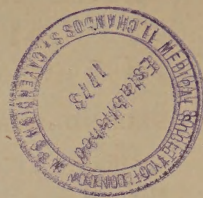












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# The London Medical Record.

## ON MILIARY TUBERCULOSIS OF THE PHARYNX.

By DR. B. FRÄNKEL.\*

THE participation of the pharynx in pulmonary phthisis is mentioned in nearly all text-books. The attendant chronic catarrh of the pharynx, its anæmia and hyperæsthesia, are phenomena which have been nearly sufficiently treated. The occurrence of ulcers in the pharynx in pulmonary consumption (see Rühle, *Ueber Pharynxkrankheiten*; Volkmann's *Sammlung Klinischer Vorträge*) and also in miliary tuberculosis, has been frequently spoken of as a rare coincidence. I believe, however, that miliary tuberculosis of the pharynx has not yet attained that citizenship—if I may use the word—in pathology to which its diagnostic importance and its pathological dignity entitle it. Perhaps, however, I should not have brought the subject forward, did I not believe that, as yet, there are no good descriptions of this form of disease. A memoir has recently been published by Isambert in the *Annales des Maladies de l'Oreille et du Larynx*, which, in my opinion, is one of the best that has been written on the subject; and I attach all the more value to it, inasmuch as my independent observations and researches have led to similar and, in many cases, identical results with his. The more recent text-book also contains very accurate accounts of the malady by O. Weber (Pitha and Billroth's *Chirurgie*, vol. iii) and E. Wagner (Ziemssen's *Handbuch der Specielle Pathologie und Therapie*, vol. vii). Single cases are described by B. Wagner (*Archiv der Heilkunde*, vol. vi), and E. Wagner (*Ib.*, vol. xii). In directing your attention to this disease, I do so, because I have a relatively large amount of material at my disposal—having seen six cases of the kind—and because I believe that through my contributions the disease may be regarded from several new points of view.

I will first relate the histories of the patients, giving those only at greater length in which necropsies were made.

In 1867, I had for some time under observation a labourer, aged 42, who, along with distinctly marked pulmonary phthisis, had tuberculous ulcers of the back of the tongue and of the whole pharynx. He was attacked with intercurrent diphtheria of the pharynx, for which he was admitted into the Charité Hospital, where he soon died. The *post mortem* examination, made by Cohnheim, revealed general miliary tuberculosis. The body was much emaciated; there were cheesy pneumonia, and cavities and old and recent miliary tubercles in both lungs. Miliary tubercles were also found in the liver, spleen, kidneys, prostate, thyroid body, and choroid. There were tuberculous ulcers on the back of the tongue, and in the pharynx and ileum; also tuberculous lymphadenitis in the neck and mesentery. The evidences of diphtheria were still present in the pharynx. In this, the first case in which I made the diagnosis of tuberculous ulceration of the pharynx,

I had the good fortune of having my opinion confirmed by a most competent pathologist.

A short time afterwards, I treated a girl, aged 18, for the same affection. As she was pregnant, it was at first suspected that the ulcers were syphilitic. Their appearance, however, and the fact that they grew worse under antisyphilitic treatment, as well as the constantly evident signs of a progressing affection of the apices of the lungs, pointed out the nature of the disease. She returned to her home, and I have since heard nothing of her fate.

The third patient was first seen by me on April 9th, 1874. A man aged 33, a domestic servant, whose father and two sisters had died of phthisis, and who had long had a cough, and had hæmoptysis a year previously to my seeing him, but who absolutely denied any syphilitic infection, came to my consulting-room at the hospital on account of severe pain in swallowing, which had troubled him eight weeks. He was a pale, haggard man, showing all the signs of pulmonary consumption: at the upper part of the right lung, as far as the third rib, in front and also behind, there were bronchial breathing and rhonchi, with dulness. The whole right side of the pharynx was the seat of extensive tuberculous ulcers, which extended forwards over the glosso-palatine arch and implicated the velum palati. The uvula was as thick as a thumb, and was covered with small hard nodules, of the size of millet-seeds or larger. The insertion of the uvula into the velum was surrounded with a circle of lenticular ulcers. The edges of the ulcers were like bacon in some parts, and in their neighbourhood grey and yellow nodules could be seen. The lymphatic glands beneath the angle of the jaw and in various parts of the neck and nape, especially on the right side, were swollen to the size of walnuts; the glands at the elbow were as large as beans, and those of the groin as large as peas. The right testis was greatly swollen, and hard in parts; and the epididymis was changed into a hard tumour. The patient was unable to swallow solid food; and fluids passed with difficulty into the œsophagus. He derived no benefit from iodide of potassium; and, after having been under treatment fourteen days, he went to his mother's house in the country, where he soon afterwards died.

I observed the fourth case in the Augusta Hospital. The wife of a railway official was received as an in-patient on July 29th, 1874. Her family history was good; one brother only had died of chest-disease. Of her children, three had died; one was alive and healthy. She said that she had always had good health, and never had syphilis. Eight weeks before admission, she had difficulty in deglutition and pain in the neck, attended with fever, cough, and loss of strength. She was of middle size, and poorly nourished. There were signs of phthisis at the apices of the lungs. Confluent lenticular ulcers were seen on the whole surface of the velum palati on the right side, and on a small portion on the left: also on both sides of the fauces as well as the posterior wall of the pharynx. On the right side, there were poly-poid excrescences in the tonsillar region. The uvula was atrophied. At the anterior part of the tongue were two cleared patches, not projecting above the surface (nævi). At the left commissure of the lips were two small ulcers of the size of hemp-seeds. The cervical lymphatic glands were much enlarged. On laryngoscopic examination, the epiglottis was found greatly shortened in its free portion. The upper border formed a horizontal rim, 0.15 inch thick in some parts, lying closely applied to the œdematous root of the

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tongue. The whole epiglottis was covered with confluent ulcers, as were also the pharyngo-epiglottic and arytaeno-epiglottic folds. Several ulcers were observed over the arytenoid cartilages. The false vocal cords were swollen, and beneath them the true cords were seen as narrow clear red bands, irregularly notched. All the symptoms grew worse during the patient's stay in hospital; the ulcers spread, the pulmonary symptoms and the dysphagia increased; and she died. At the necropsy, both lungs presented, along with cheesy broncho-pneumonia, an abundance of grey nodules; and in the left lung a cavity as large as a hen's egg was found. There were also tubercles in the pleura, liver, and spleen, and tuberculous ulcers in the intestines. The condition of the pharynx and larynx corresponded with the observations made during life; but the ulcers could be traced on the nasal portion of the posterior wall of the pharynx and on the velum, while they ceased abruptly at the commencement of the œsophagus.

The fifth case was seen by me in the out-patient department of the Augusta Hospital from October 9 to 20, 1874. The patient was a labourer's wife, aged 37, in both of whose lungs were detected distinct signs of phthisis. She complained of dysphagia; and an examination of the pharynx discovered, on the lateral walls, confluent and rapidly spreading lenticular ulcers, in the vicinity of which semi-transparent grey nodules could be seen and felt. The laryngoscope revealed considerable œdema of the epiglottis, less of the arytaeno-epiglottic folds; also small ulcers near the arytaenoid cartilage, and congestion of the vocal cords and trachea. The cervical lymphatic glands were in parts swollen to the size of walnuts.

The sixth patient was a labourer, aged 29, who first came to my consulting room on November 15, 1875. His parents had died of inflammation of the lungs and bronchitis. Of his sisters, three had died—of what diseases he did not know; one brother and two half-sisters were alive and healthy. He said that he had always had good health, but had occasionally suffered from pain in the chest and cough, which had not confined him to bed. He had never observed blood in the sputa. He was certain that he had never had syphilis. In the beginning of October he had a feel of pressure in the neck, and deglutition soon became difficult and painful. This, with loss of strength, was the ground of his complaint. He had fœtor of the mouth and stomatitis, the result of mercurial inunction which had been prescribed for him. On the velum palati, and on both sides of the pharynx, were numerous readily bleeding lenticular ulcers, in the neighbourhood of which grey and yellow nodules were observed. There was very great œdema of the epiglottis, preventing a view of the interior of the larynx. The cervical lymphatic glands, especially on the right side, were swollen to the size of walnuts; and in the groin and bicipital sulcus of the right arm there were glands larger than beans. On the upper right side of the chest, as far as the second rib, there were bronchial breathing, rhonchi, and dulness. On November 22nd there appeared, on the portions of the velum which I had noticed to be sound, an eruption of partly isolated, partly confluent, grey nodules; and on the 27th I perceived superficial ulcerations. In the meantime, all the symptoms had become essentially worse. Ulcers appeared on the posterior wall of the pharynx, and on the right border of the tongue. The stomatitis ceased after the inunction was left off, and the œdema of the glottis

was diminished; there was, however, a loss of substance on its free border. Ulcers were also seen over the arytaenoid cartilages. The patient was admitted into the Charité Hospital on December 9th, and died on the 20th, delirious. The *post mortem* examination, made by Dr. Orth on the 22nd, revealed the following conditions: Tubercular phthisis of the intestines; cheesy degeneration of the mesenteric glands; tuberculous ulcers of the pharynx, palate, tongue, and epiglottis; tuberculous lymphadenitis in the pharyngeal, laryngeal, and cervical regions; tubercle of the lungs, spleen, liver, and kidneys. The choroid membrane was free.

If we now, with the simultaneous use of the materials to be found in literature, endeavour to give a view of the pathology of the affection, and first turn to its etiology, the question arises—Why, departing from its ordinary course, does the tuberculosis in these cases become localised in the pharynx? I am not able to answer this question. Most of the patients were young or in flourishing adult age; in one case only, described by Isambert, the patient was a child four years old. Neither their calling, habits, nor mode of living, give any reason why their pharynx should be liable to the influence of special irritants. They had not previously suffered from chronic affections of the pharynx, and no ground can be found for assuming that in them the pharynx was a *locus minoris resistentiæ*. The principal point, however, is that there was no hyperplasia of the tonsils nor any condition of the pharynx, or of the fauces, which would entitle me to assume that a cheesy deposit was present here. We must then leave the question open.

Is the tuberculosis of the pharynx primary in these cases? That is to say, is the pharynx the first organ in which the tubercles are developed? In individual cases this question may certainly be answered in the negative, as the miliary tuberculosis of the pharynx accompanied a similar process in the lungs; and it would be a splitting of hairs to raise the question whether, in a man who had cavities in his lungs, and widely spread miliary tuberculosis, the disease first appeared in the pharynx or elsewhere. Isambert, however, describes cases in which the lungs and other organs were sound, while tuberculous ulcers were present in the pharynx. I have not seen such a case. My patients, when I saw them, all had signs of phthisis at the apices of the lungs, while several referred their first suffering to the throat. The pharynx was the place in which they first perceived their disease, and on which their attention was accordingly most fixed throughout its whole course. In the fourth case especially, in which the patient denied all previous illness, especially cough, and said that she had been attacked with pain in the throat while quite well, one can scarcely refrain from regarding the tuberculosis of the pharynx as primary. In any case, however, the tuberculous disease of the pharynx frequently gives indications of being older than that in other organs. We find extensive tuberculous ulcers in the throat, while the signs of apex-catarrh are with difficulty detected in the lungs. At the necropsy, also, the pharyngeal mischief was very strongly marked in comparison with that in other organs. Sometimes it is not the lungs in which we have to inquire whether the destruction is greater than in the pharynx, but the intestines. Here very extensive ulcers are found; and in one of my cases (the sixth) the mesenteric glands were cheesy, while in the hyperplasia of the cervical lymphatic glands no cheesy deposit could be found.

As regards the frequency of the occurrence of pharyngeal tuberculosis, the number of cases which I have observed leads me to agree with E. Wagner, "that it is less rare than the scantiness of pathological and clinical observations would lead us to imagine." Relatively to the frequency of tubercle, however, it is rare. With the permission of Professor Virchow, granted with his usual willingness, I have collected statistics of phthisis and tuberculosis from the records of the necropsies in the Pathological Institute during 1865 and 1866. In these years 1,085 necropsies were made, 150 of which were in cases of phthisis or tuberculosis; and among all, there is but one case in which the presence of tuberculous ulcers in the pharynx is recorded. In a man, aged 44, there were found, with extensive miliary tubercle and cavities in the lungs, tuberculous ulcers in the intestine and larynx, and on the tongue and pharynx. Navratil (*Laryngologische Beiträge*, 1871) says that in 246 cases of ulceration of the larynx or pharynx, of which 162 occurred in tuberculosis, 44 in syphilitic, 30 in scrofulous patients, and one in a case of typhus (? typhoid) he saw tuberculous ulcers of the pharynx in 20 cases; but he does not say whether these ulcers were really of tuberculous nature.

As regards the pathological anatomy, general or at least widely spread miliary tuberculosis has been found in the necropsies as yet made. The most various organs—lungs, liver, spleen, kidneys, pleura, mesentery, etc., and in one case the choroid of the eye—were beset partly with grey, partly with yellow nodules. Besides those in the pharynx, they have been found on the lips, tongue, larynx, and intestine; and, in a case observed by Bucquoy and related by Isambert, at the margin of the anus.

The ulcers in the pharynx have a distinct tuberculous character: they are genuine lenticular ulcers. The ulcers, which extend widely rather than deeply, show a cheesy or bacon-like, but sometimes, and then only in parts, a granulating base. Their edges are irregular and eroded; sometimes partially bacon-like or cheesy, or surrounded with a small inflammatory areola. In the neighbourhood of the ulcers are generally found a few single grey, generally submiliary nodules. Where these lie more closely together and become confluent, there appears to the naked eye a grey infiltration, covered with the glistening superficial layers of epithelium.

The microscopic examination which I made with the kind assistance of Dr. Löwe in his laboratory, and the details of which I reserve for another occasion, confirmed in general the observations already made (see the writings of E. Wagner and Isambert, who describe the investigations of Vulpian, Troisier, Cornil, and others). The base of the ulcers was occupied with a thick infiltration of round cells, which extended deeply into the submucous tissue, even as far as the muscles, which at these parts presented the transverse striæ less distinctly than usual. The round cells in the glands followed the interacinous and intra-acinous connective tissue, infiltrating it; while the special gland-cells remained free, though in a state of fatty degeneration. They had a great tendency to become cheesy: and portions of cheesy matter often lay among the round cells. On the other hand, isolated grey nodules were rare and difficult to find in microscopical sections. I am, however, able to shew you one taken from the pharynx in Case No. 4, in which the pressure of giant-cells especially removes all doubt as to the nature of the disease.

In all the cases described by me, there was more

or less considerable swelling of the lymphatic glands, especially in the neck.

[To be continued.]

## WASILIEFF ON THE BRAIN AND CARDIAC GANGLIA IN HYDROPHOBIA.

N. WASILIEFF (*Centralblatt für die Medicinischen Wissenschaften*, No. 36,) examined the brain and heart of a woman, aged 32, who died in the wards of Dr. Botkin of St. Petersburg, from hydrophobia. The patient was bit in the upper lip by a dog on the 9th July, 1875, a horseshoe-shaped scar being left. The first symptoms of the disease, general uneasiness and excitability, appeared on Sept. 20th. She was admitted Sept. 22nd, at ten o'clock. She had hallucinations, and said she could neither drink nor look at water. At 2.30 P.M. an attempt to cause the patient to inspire oxygen brought on suddenly clonic and tonic spasms, and half-an-hour later maniacal delirium appeared. The patient died at 3.30 A.M., on Sept. 23rd, with marked symptoms of paralysis of the heart.

The following parts of the brain were examined microscopically;—Corpora striata, thalami optici, pons Varolii, medulla, and cerebellum.

1. Some of the nerve-cells of the medulla oblongata appeared turbid, and their outline and nucleus indistinct. Similar, though more pronounced changes, were observed in Purkinje's cells.

2. In the interstitial tissue of the brain there were large masses of indifferent round corpuscles, of the size of white blood-corpuscles, which were darkly tinged by the staining agent. These elements (very probably white blood-corpuscles) were specially to be found in the perivascular spaces or in their neighbourhood; although some of them, collected into groups of six or ten, lay far from the vessels, amidst the neuroglia. Further, others lay in the pericellular spaces, and even projected into the protoplasm of the nerve-cells.

3. The blood-vessels were distended and overfilled with blood-corpuscles, and their epithelium partly swollen up; here and there were vessels whose walls consisted of a finely granular, highly refractive yellow substance, soluble neither in absolute alcohol nor in turpentine.

The most pronounced appearance, however, was the presence (specially in the cortical layer of the cerebrum) of a special dimly hyaline and highly refractive substance in the perivascular spaces. Sometimes this substance was so arranged round the vessel, that on transverse section it appeared to be surrounded by an irregular ring, exercising so strong a pressure as to narrow the lumen of the vessel considerably; in other cases this hyaline substance lay in small heaps, which were sometimes arranged around the vessel so symmetrically as to put one in mind of epithelium. This substance was not coloured by any of the staining re-agents, nor did it dissolve in boiling caustic potash or strong acids (acetic and hydrochloric); and a negative result was obtained with absolute alcohol, turpentine, and on testing for amyloid substance. In other parts of the brain, the perivascular spaces were more or less dilated.

The changes in the cardiac ganglia were these.

1. The epithelioid lining of the sheath of the nerve-cells was partly swollen up; in the interior of the sheath, and in the interstitial tissue of the ganglia, round corpuscles of the size of white blood-corpuscles



were found. The blood-vessels surrounding the ganglia, with the exception of the large veins, appeared for the most part to be bloodless.

2. In the nerve-cells themselves, the protoplasm appeared more or less dim, consequently their nuclei were either indistinct or invisible; in some cells there was a collection of finely granular pigment. The most pronounced *never failing* changes consisted in this, that the nerve-cells never completely filled their sheath; but a free space always existed between, across which only processes from the nerve-cells stretched. (A similar appearance was described by Lubimoff in the oedema of the sympathetic ganglia in cardiac disease.)

Micrometric observations were made to ascertain whether this space was due to shrinking of the protoplasm of the cell or to oedema of its capsule. It was proved that it was due to an accumulation of an oedematous fluid between the protoplasm and its sheath. This oedemic condition of the cardiac ganglia must be of not unfrequent occurrence, for the ganglia lie in cellular tissue rich in fat, which affords little resistance to the dilatation of the capsule, and the number of blood-vessels surrounding the ganglia predispose to it. WM. STIRLING, D.Sc., M.D.

#### REMARKS UPON THE CLASSIFICATION OF MENTAL DISEASES.\*

ALL branches of medical psychology seem to have served in turn as the basis of modern classification, the most pronounced instances of this truth being found in the systems of Morel and Skae: that of the former being mainly etiologico-symptomatic; that of the latter, etiologico-pathological. The classification of Morel, although highly appreciated in the scientific world, found few partisans and fewer imitators. Though founded upon an exact principle, its groups are heterogenous, and the limits which separate them are arbitrary, one and the same affection being placed in several groups, according to the point of view from which it is regarded. The attempt of Skae, as modified by Maudsley and Tuke, seems more natural. Based chiefly upon bodily alterations in connexion with the mental affection, it contains seventeen morbid species, whose clinical value is yet far from being complete; as modified by Dr. Batty Tuke, it is an example of a pure etiologico-pathological classification; its great fault being that it is too exclusively somatic. The Committee of the English Medico-Psychological Association tried to remedy this capital defect, by adding to it several characters of a psychical order. The table they drew up gave at one view all the symptoms, somatic as well as psychical, of the affection; but it has not the true clinical character which constitutes, at the present day, the object of all researches. Unfortunately, all these attempts are much too theoretical; they forestall the actual state of science, and will not yield all their fruits until the time when the pathology of mental disease shall be established. Kahlbaum, inspired by the idea of Neumann, who postulated a typical form of insanity, commencing in a state of melancholia, passing through that of mania, and ending in confirmed dementia, has attempted to base a classification on the progress of the disease, his forms being placed according as they diverge more or less from the fundamental type. But these are isolated attempts, and have had but little influence

upon the general direction of psychology. What is to be said of the attempt of Guislain? The new vocabulary which he sought to impose upon the science speaks much for his good intentions: he, the clinician *par excellence*, chose a precise word to designate the science of those diseases which may attack a man in the intimate union of the mind and of the body, and in the whole of his faculties. To this entirely new nomenclature, to which science was not accustomed, we may attribute the small hold that this classification has had, meeting with more criticism than eulogy; and yet it must be admitted that the description he gave of the various forms constituted a real advance, and paved the way for considerations of greater importance. His two chief genera, which he at first named Luperophrénie and Hyperphrénie, are in effect based exclusively upon the emotional state; and in the consideration of that state, in isolation and combination it forms a true pathological ladder; the base of which is placed amongst the initial disturbances of the moral sensibility, and whose ascending steps are formed by disorders of greater complexity which may grow upon the morbid base thus prepared. In some of the terms of this classification there is an appearance of great fidelity to Nature; and when, later, Griesinger divided his great class of mental diseases into states of mental depression and exaltation, he did no more than produce, almost literally, the ideas of Guislain. And, as regards the genus which the Belgian alienist constituted under the perhaps improper name of Folly, and which he characterised by lesions of the will, has Foville done more than revive them under the name of Impulsive Insanity? This, then, is the point at which mental science has arrived in the matter of classification; and progress seems to lie rather in the way of development than by entirely new departures. Not knowing the exact nature of the disease, we aim at interpreting it by the clinical appearances which it presents. To make the morbid groups sufficiently correct and comprehensive to suppose the lesions identical, is the aim of the clinicians, was the programme of Falret, and also that of Griesinger in the later years of his life. Alterations solely confined to the intellectual or moral nature cannot constitute the basis of a classification; these are not lesions of bodily functions, comprising sensation, motility, and the animal functions; these are not yet pathological and etiological elements; it is the whole of these phenomena considered, as well in their isolation as in their progress and succession, which must contribute to constitute a set of symptoms so complete and distinct as to make the species real and the lesions identical. Unfortunately, this seems hardly possible at present; the outlines of such a classification, and its lineaments, as sketched out by Falret, are perhaps too psychological,—that is to say, seem to leave out too much the organic phenomena. To return:—the learned alienist, in the type which he laid down, took into consideration the progress of the disease, and also the various modes of termination, and it is sufficient to read the lucid pages which he writes upon the subject, to be convinced of the great value these data have had in the formation of various morbid types. Griesinger, engaged in the same question, arrived at results altogether dissimilar, a new proof of the obscurity of the subject, and the research still required before the problem of the classification of mental diseases can stand upon the firm ground of a scientific reality. The Medico-Psychological Association, assembled for the purpose, proposed a classification which seems

\* *Annales et Bulletin de Société de Médecine de Gand*, Nov. 1876.

to be in harmony with the tendency of modern psychology. Nevertheless, of the new groups which it has endeavoured to establish in spite of much criticism, that of monomania is somewhat old; and if the insanity of Persecution presents, in certain cases, the characters of a natural group, yet if we look at its elements they vary from the most profound melancholia to the most characteristic general paralysis. Foville has introduced into this system some modifications, which, he has shown, notably ameliorate an attempt which has almost a unique clinical basis. If we compare the classification of psychiatry in its present state, with what it was at the time of Pinel, we shall recognise how much real progress has been accomplished. The twenty-six years which separate us from the founder of psychological medicine, have not been unfruitful. After having called in the aid of every branch of psychiatry to form a classification, we are now returning to clinical observation for what we have in vain sought elsewhere. And, until an ideal classification shall have been attained, a symptomological division, which gives the clinical aspects of the various forms of insanity, will always be useful. From this point of view it may be maintained that the classification of Guislain is, perhaps, one of the most practical. Particular cases, yet none the less characteristic, whose equivocal symptoms find no place in any other divisions, arrange themselves naturally in the species of Guislain. And this is a real advantage, which will be appreciated daily by those who adopt the practice of the Belgian alienist.

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### MÜLLER ON THE PRODRAMATA OF INSANITY.

A PAPER upon this subject is contained in the *Annales et Bulletin de la Société de Médecine de Gand*, Nov. 1876. Dr. Müller remarks that an attentive study of the pathological phenomena of the psychical life presents the greatest interest for the medical expert, at a time when to the ignorant the mental functions seem still completely normal; the disease not commencing for the public until the mental functions are so far disturbed that there can be no shadow of doubt as to their aberration. Exact observation demonstrates that numerous patients suffer for years in the mental sphere without showing any intellectual disturbance. The frequency of these prodromatous states is astonishing, and they are rarely seen in asylums. The individual, still presenting the appearance of health, experiences alterations of a periodic nature, characterised by morbid irritability or phenomena of intellectual enfeeblement. These symptoms merit the greater attention, as they are the first germs of a commencing affection; they are frequently concealed by the patient from motives of false shame, professional exigencies, or family reasons. Dr. Müller is persuaded that the mental disease treated in asylums is no other than the final result of a prodromic condition which has existed for months or years, and thinks that psychiatry, along with other branches of the healing art, should recall a little more the motto, *Principiis obsta*. Although many affections of the mind are rapidly developed, a large number are preceded by long prodromata before they assume a definite form. In the commencement they are accompanied by a certain disturbance of psychical equilibrium, persistent insomnia, fear of impending insanity; a mental uncertainty which oscillates constantly upon the

borderland of sanity and insanity, and which is not rectified, except by a more attentive control than the patient exercises upon himself. Hypochondria, melancholia, want of will, figure very often in this prodromic state; and frequently we find morbid irritability, strange caprices, exultation, precordial agony, anxiety, agitation, religious aberration, &c.

In mental, as in ordinary medicine, it is difficult to fix a limit between health and disease, and it is as difficult to attain and maintain the ideal of mental as of physical health. The more marked oscillations show themselves in the psycho-sensitive sphere. Some days we centre our happiness in the accomplishment of our aims, in our social position, &c., other days we have a contrary disposition without any change having occurred in our exterior circumstances. What is at one time a joy and a happiness, becomes at other times a pain and a care; we look at the dark side of things, invent inquietudes, and are distrustful and irritable. One day we are disposed to intellectual work, and we surmount and enjoy the difficulties we may encounter; the next, the least intellectual work fatigues us, a letter is hard work, conversation is painful, and our ordinary occupations present no interest for us. These primary oscillations in our moral nature, though consistent with normal mental health, form the transition between health and disease, but they are not sufficiently permanent to rank as a disease.

A special pathological interest is found in the mental alterations which are induced during health, as in the female during the catamenial periods, during the puerperal state, pregnancy, the climacteric period, and those which arise in the course of uterine disease. Sometimes we observe fright, a tendency to syncope or hysteria, hesitation, insatiable curiosity, peevishness, acetic tendencies or religiosity. During pregnancy with the access of pains, the fear of death, &c., here the law regards the perilous situation, and restrains its severities. I would in this connection lay great stress upon hereditary influences, and we shall find the development of the mental defect to depend upon the normal life; the intervention of the medical art and of an energetic will being able to do much towards suppressing the mental defect. Finally, we shall sometimes discover in the prodromic period of mental disease intellectual enfeeblement occasionally coincident with syphilis and mercurialisation, having many symptoms identical with those of general paralysis.

If we examine these prodromata, we find three forms of mental alteration.

I. First, and most frequently, cases where the whole of the mental faculties are involved in the oscillations and destruction of due equilibrium in their action. The alternations of depression and exaltation finding their ultimate expression in the disease termed by alienists *folie circulaire*.

II. Secondly, where phenomena of sensation or impulsion are imposed upon the patient, and their domination recognised by him; the danger in these cases being that the impulses and sensations overleap the bounds of recognition by the patient. They have a great analogy to neuralgia, in their selection of a special nerve-tract, in connection probably with some unknown physiological condition of certain cerebral centres. These we may with good reason term psychodynia. According to the mental centre affected, the symptoms may appear in the form of sensations (illusions and hallucinations) or of irresistible impulses.

III. Thirdly, symptoms of enfeeblement or defect,



the usual prodromata of dementia : lesions of memory which, if not detected in conversation, are easily seen in the writing of letters, &c. : forgetfulness of the chief words in discourse, as the use of the verb, &c. For the sake of distinction we may designate this group of symptoms by the word psycholysis. The termination is nearly always in dementia, and its duration varies greatly according to the power of resistance in this organism, or to the nature of the surroundings.

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## ARLT ON THE ORIGIN AND CAUSES OF NEAR-SIGHTEDNESS.

THE *Boston Medical and Surgical Journal* for December 21, 1876, contains a translation by Dr. Henry W. Williams, Professor of Ophthalmology in Harvard University, of some of the important points in a monograph published lately by Professor Arlt, of Vienna. As Dr. Williams observes, the practical conclusions of the author deserve the earnest attention of the profession and the public.

Near-sightedness, or myopia, as a permanent condition of refraction of the eye in which parallel rays are brought to a focus before they reach the retina, usually depends upon an elongation of the globe from before backwards, lengthening the antero-posterior axis of the vitreous, increasing the bulk of the latter by serous effusion, and thus crowding back and thinning the sclera, choroid, and retina.

In moderate and high degrees of myopia we find a striking alteration in the sclera, which becomes distended and thinned, the thinnest portion being, as a rule, at the posterior pole in the vicinity of the macula lutea. The choroid is also pressed backward and expanded, and at the temporal side of the optic papilla the changes take the form of a crescent, its concave border blending with the papilla, whilst its convex edge extends more or less towards the macula lutea. This change must be regarded as an atrophy of the choroid. Similar alterations in the retina have not as yet been clearly demonstrated anatomically, but my opinion that the retina is distended and its elements are thus separated from each other has been accepted by Donders, Ed. Jaeger, and others. In fact Horner and Iwanoff have observed an oblique position of the rods and cones in the sensitive layer of the retina.

Before the manifestation of near-sightedness, which is most frequently between the ages of ten and sixteen, seldom as early as the fifth or sixth year of age, we may suspect a predisposition to it, from a general resemblance of the individual to parents or to other members of the family who are short-sighted ; but its development cannot be predicted with certainty until the special symptoms appear. As in many other hereditary conditions and diseases, myopia may be more readily and fully developed by external causes.

Congenital near-sightedness is as yet not proven ; but the myopia of newborn infants depends on the greater convexity of the crystalline lens.

Predisposition to myopia—but not the condition itself—is often inherited ; but myopia may often be originated where no hereditary tendency existed. Among several brothers and sisters in whose family there has been no near-sightedness, only those become myopic who tax the eyes unduly in their youth. I myself have been myopic  $\frac{1}{4}$  since the age of sixteen or seventeen. Neither my parents nor

grand-parents were so in the slightest degree. At thirteen I had excellent vision for far and near, but after four years of close study I noticed, during the vacations, that I could no longer recognise objects which I had formerly seen at a distance of a league. Thenceforward I thought it necessary to be careful, and my myopia has remained stationary because I began in time to avoid injurious use of my eyes. Of five brothers in a family I know, in which there had been no trace of myopia, three, who were workmen, have never shown any near-sightedness. The other two studied medicine ; one of these first discovered that he was myopic whilst at the university. After graduation he devoted himself to active practice in a country district, and can now see well with concave glasses  $\frac{1}{4}$ . The second, after obtaining his degree, devoted himself to science, and has obtained a world-wide reputation ; but unfortunately his near-sightedness, which began at twenty years of age, has greatly increased ; and he was compelled, soon after reaching his sixtieth year, to resign his position as professor, because his eyes, which had reached the degree of myopia  $\frac{1}{4}$ , could no longer read continuously without pain.

Near-sightedness is not primarily developed after about the age of sixteen. If supposed to have begun later, it is probable that its real commencement had not been observed. Only those eyes become myopic which were originally normal, or, at most, slightly hypermetropic. It is possible that young eyes, moderately hypermetropic, may become normal by the natural processes of growth and may afterward undergo myopic changes.

The growth of the eyes ends at about the age of puberty, or certainly as soon as the twentieth year. From this time normal or hypermetropic eyes remain almost unchanged in form until old age, but highly myopic eyes are an exception to this rule.

Coccia caused young near-sighted persons to look at near objects, whilst he examined by the aid of suitable glasses the venous circulation within the eye ; then suddenly relaxing the accommodation by having them look at far objects, he saw clearly that the calibre of the veins was increased, thus proving that they had been subjected to greater pressure in looking at near than at far distances. The reason why this intra-ocular pressure causes a giving way of the sclera near the posterior pole of the globe is found in the fact that the juvenile sclera is still tender and dilatable, and is supported, in this region, only by loose cellular and fatty tissues, and not by the ocular muscles or their tendons.

Let us now inquire what consequences are to be expected when continued work upon near objects has given rise to congestion of the circulation, increased intra-ocular pressure, and thinning of the posterior wall of the globe. If this too continuous use of the eyes is suspended, the sclera may recover its tone ; but if the resumption of work renews the distension before the dilated membranes return to their normal state, or if the stretching goes beyond certain limits, the sclera, choroid, and retina do not fully recover their normal condition, and the intra-ocular vessels continue for some time engorged. If this state of things exists for some hours daily, a serous exudation may occur, increasing the bulk of the vitreous and lessening its consistence.

If we would hinder the production and prevent the increase of myopia, we must not only be careful that youthful eyes are not overtaken with work upon small objects, but must also see to it that in the in-

tervals of study, etc., opportunity is given for recreation and practice in looking at objects at a distance. The numerous expedients for averting near-sightedness are nearly all directed against overwork, insufficient light, bad print, etc., during school hours. But when we see children four or five years, old allowed, especially in their convalescence from measles, scarlatina, and other diseases, to amuse themselves for hours with objects which, on account of their small size, must be held very near the eyes, or in pencil-drawing (for which the mistaken parents delight in observing a talent), and this too often in badly-lighted rooms, we cannot but suspect that the seeds of near-sightedness are already sown. In large cities, even during the favourable years of childhood, there is but little recreation in the open air, and there are few games which require looking at remote objects, or the estimation of distances by the eye. The eyes of the little ones thus become restricted to a limited range of vision.

I would, therefore, repeat that I regard the practising the eyes in looking at distant things during the early years of childhood as no less important than a rational limitation of the amount of their use in reading, writing, and such occupations, and frequent interruption of this use, or at least a systematic change in the kind of occupation. As the want of opportunity in cities for free muscular exercise is compensated for by gymnastics, so the eyes should not only have time for rest, but should also be trained in both far and near seeing, and thus be symmetrically developed.

#### PICCOLO AND SIRENA ON WOUNDS OF THE SPINAL CORD.

IN an article in the *Giornale di Scienze Naturale ed Economiche* of Palermo, vol. xi (also reprinted as a separate pamphlet), Professors G. Piccolo and S. Sirena have made an important contribution to the physiology and pathology of the spinal cord.

They were led to make their researches in consequence of the uncertainty which exists as to the functions of different parts of the cord, and the effects of dividing it. They made experiments on dogs, rabbits, and pigeons (especially of the former), with the following objects:

1. To ascertain whether sensibility to touch remained or was destroyed after section of the posterior columns. (These experiments were made on dogs.)

2. To study the disturbances of sensation and motion, as well as the pathological changes of structure, consecutive on partial or total division of the cord.

Except in three cases where the spinal cord was laid bare, they divided the cord by the subcutaneous method. A long narrow tenotome, sometimes double-edged, sometimes single-edged, was used. The animal having been fastened down on a table, certain points were taken as landmarks—in the lumbar region, the space between one spinous process and another; in the dorsal region, the posterior edge of a rib close to its articulation with the transverse process; in the cervical region, the extremity of the transverse process of the atlas, the distance of the subjacent intervertebral foramen to the articulating process of the third cervical vertebra being approximately calculated. The spinal column being fixed at one of these points with the left thumb or index finger, the tenotome, held like a pen in the right

hand, was introduced horizontally between the muscles through the intervertebral foramen into the spinal canal, its entrance into which was indicated by a cry of pain and a tetanic shock. The animal being unbound and placed on the ground, an approximate estimate only of the amount of injury could be at first obtained, since, immediately or a short time after the operation, the alterations of sensation and motion were nearly the same, no matter where the cord was wounded. The experiments were always successful.

They were led to follow this plan in consequence of a lamentable accident which occurred at Palermo;\* and a similar mode was followed by Rolando in 1828. By this mode of operation, hæmorrhage, and suppuration were avoided, and less suffering was caused to the animals. The following are the results at which they arrived.

1. In dogs in which the posterior columns of the spinal cord and the posterior cornua of the grey matter were divided transversely in the dorso-lumbar region, tactile sensibility and that to pain were preserved. Hence both these are conveyed to the encephalon by the grey matter.

2. In dogs in which the posterior columns were left uninjured, and nearly the whole of the remaining columns destroyed, the grey matter being completely interrupted, tactile and dolorific sensibility became less in the organs innervated by the peripheral portion of the cord. Hence the posterior columns are not the conductors of tactile sensation, and still less of pain.

3. The paralysis following all lesions, complete or incomplete, of the posterior half of the cord (in the cervical, dorsal, and lumbar regions) perceptibly improved after a longer or shorter time. This was indicated by the restoration of movements, not only in walking and running, but also in leaping and scratching.

4. Partial restoration of motion was observed in paralysed limbs deprived of sensation, when a small portion of the anterior and of the corresponding lateral columns was left uninjured, and was attenuated by consecutive sclerosis. Thus a bitch, whose spinal cord was found in this condition after death, walked shortly and irregularly; sometimes it made some ordinary steps, but its gait soon became disordered if it attempted to move faster. Nevertheless, it scratched its ear with its left foot. Hence very limited co-ordinate movements may be performed, although the limbs are absolutely without sensation.

5. The paraplegia produced by section of the anterior (inferior) half of the spinal cord gradually improved and at last ceased; the dogs becoming able to co-ordinate the movements both of walking and of running. As this was observed in many animals, there is reason for admitting that the anterior and lateral columns of the cord, as regards their function, are reciprocally supported; so that, when there is a solution of continuity in the anterior columns and the corresponding lateral columns, the voluntary motor stimulus passes from the posterior columns, and *vice versa*. Hence, after division of the anterior half of the cord, motor power is more or less completely re-established after some weeks.

6. After lesion of the lateral columns of one or both sides in the lumbar region, no alteration of any

\* A man named F. Finocchiaro was wounded in the left cheek by a knife which also struck the spinal cord in the cervical region, instantly rendering him paralysed. He was taken into hospital, where he died in a few weeks, and, at the necropsy, it was found that the knife had entered the spinal canal through the intervertebral foramen.



kind in the movements of the posterior limbs could be observed after cicatrisation had taken place.

7. After analogous lesions in the cervical region, the movements of the thorax and limbs were re-established. Hence the lateral columns in the cervical region have no special influence on the respiratory movements, and in this region, as well as in the lumbar, their place may be supplied by the anterior columns, and *vice versa*.

8. After complete division of one lateral half of the cord in the lumbar region in dogs, absolute immobility of the corresponding posterior limb was observed. On the contrary, after an analogous section of the dorsal region in pigeons, there was paralysis of the corresponding limb, but without absolute immobility. In those animals, complete re-establishment of motor power was observed after incomplete hemisection. It is hence inferred that the voluntary motor impulse follows a direct course in the lumbar region of the cord, and a partially crossed one in the dorsal (at least in birds).

9. In complete or incomplete division of half the spinal cord in the cervical and dorsal regions, sensation in the organs behind the lesion on the corresponding side was not only preserved but even exaggerated;\* but complete anæsthesia was never observed in the organs of the opposite side, where sensation was sometimes reduced, sometimes preserved in the normal state. On the other hand, after division of half the spinal cord on one side and total destruction of the central grey matter of the opposite side, in the lumbar region of dogs, hyperæsthesia was not found, but sensation was weakened in the posterior limb corresponding to the seat of injury, and preserved in the normal state on the other side. Hence sensory stimuli are not conveyed to the brain along the cord by a predetermined way, that is to say, by direct conductors in each half of the medulla, but decussate more or less completely, so that both sides indifferently join in conveying the impression to the encephalon, passing through the grey commissure.

10. After complete division of the spinal cord in the lumbar region, disturbances of defecation were not observed. Hence it is concluded that the lower portion of the intestine—with the exception of the sphincter ani—is, at least in dogs, innervated by the great sympathetic; unless, along with paralysis of the hinder limbs, there have also been paralysis of the last portion of the rectum.

11. After total or partial division of the spinal cord in the lumbar region, no signs of paralysis were observed in the uterus or vagina. These organs performed their functions as in the normal state. As far as regards the present experiments, it may be concluded that the sensory and motor nerves of the uterus are derived from the great sympathetic and not from the sacral. If, as some believe, they came from the latter, paralysis of the pelvic limbs would be accompanied by immobility of the above-named organs.

12. Analogous lesions to the above were not always followed by incontinence of urine; and when it did occur, it was temporary. In the necropsies, the bladder was always found contracted. Hence the nervous supply of the bladder and its sphincter is derived from the sympathetic.

13. After lesion of the medulla in the cervical region (incomplete hemisection of the right side or of

the posterior segment of the medulla), the authors observed paralysis of the involuntary muscles of the face, and especially of the iris, analogous to that which follows division of the sympathetic in the neck. They hence conclude, with Budge and Waller, that the roots of the latter in the neck proceed from the cervical portion of the cord. This paralysis was followed by recovery in a few weeks: hence it is concluded that the paralysed radical fibres of the sympathetic may be compensated by other fibres of that nerve.

14. After severe compression of the medulla in the lumbar region, the first effect observed was paraplegia analogous to that produced by section of the posterior part of the cord, but differing from this in the quickness with which motion and sensation were re-established.

15. In dogs in which the continuity of the central grey matter was interrupted, the continuity of the anterior or posterior cornua being also broken, either in front of or behind the central canal, no disturbance of motor power was observed after healing had taken place. Similar lesions, and any lesions whatever of the grey substance, ordinarily produced, as an immediate result, anæsthesia or reduction of sensibility, which returned more or less completely according to the amount of grey matter left uninjured. In solution of continuity of the central portion of the grey matter, sensation returned to the normal state after cicatrisation: on the other hand, in some cases where the grey matter remained connected by the ends of the cornua, anterior or posterior, one or both, sensation did not completely return. But with any remainder whatever of grey matter, however sclerosed, the transmission of sensory impressions was never seen to be intercepted. Hence there are not, in the grey substance of the cord, portions specially charged with the duty of conducting sensory impressions, nor portions which exclusively transmit motor impulses, but they act concurrently with the white substance of the antero-lateral columns. Besides, if any portion of grey matter, however sclerosed, maintain the continuity of the grey axis of the medulla, sensation is preserved in the limbs behind the lesion; and in them, indeed, co-ordinate movements take place if the anterior or lateral columns be uninjured.

16. In cases of incomplete division of the posterior columns and of the corresponding cornua of grey matter in the cervical region of the spinal cord, hyperæsthesia was observed on one side of the body, with preservation of sensation in the normal state on the other side. In one case, however, hyperæsthesia was observed, although the posterior columns and only two-thirds of the grey matter remained uninjured. Hence, all the partial lesions of the cord which give rise to hyperæsthesia are not yet accurately known.

17. After none of the lesions by the subcutaneous method was the spinal cord ever found to be the seat of disfigurement, softening, extravasation of blood, or purulent infiltration, even in animals killed a few days after the operation. This shows that wounds of the medulla, made by the subcutaneous method, are not followed by severe pathological disturbances.

18. In all the experiments, the edges of the wound in the spinal cord were always found to be indurated to the extent of two or three millimètres in the central and five or six millimètres in the peripheral portion. It was also observed in all cases, that the portion of the spinal cord which was not divided was also partially indurated, but preserved its functions.

19. In the roots of the spinal nerves in the peripheral portion of grey matter, close to the lesion of

\* The hyperæsthesia was seen to last four or five days in dogs, two or three in pigeons; and on its cessation, sensation returned to its primary condition on both sides.

continuity, microscopic examination showed fatty degeneration of the nerve-tubes, commencing generally on the fifth day from the injury. In analogous roots, in animals which were allowed to live several months, atrophy of many of the nerve-fibres was seen. The fatty degeneration or atrophy was always limited to the roots on the injured side. Fatty degeneration was indeed observed to spread to two roots below or behind the lesion of continuity; but in these last the nerve-tubes presented a slightly granular aspect rather than true degeneration. The nerve-tubules of the roots in the central portion close to the lesion were always found normal.

20. Finally, in all the vivisections, including those in which the animals were kept alive up to the fifth month, there was no evidence of reproduction of nerve-substance. The two portions of the spinal cord were always found united by a cicatricial tissue; which, in dogs killed on the twelfth or fifteenth day, consisted of round, oval, and fusiform cells; while in dogs sacrificed after the fortieth day it was formed in great part of fibrillar connective tissue and fusiform cells with long projections; the cells, as well as the fibres, having their greater diameter transverse to the axes of the nerve-tubes.

#### ALESSANDRINI ON A CASE OF WOUND OF THE RIGHT HALF OF THE LOWER PART OF THE CERVICAL SPINAL CORD.

Dr. ALESSANDRINI, director of the hospital at Chiari, relates the following case in the *Annali Universali di Medicina e Chirurgia*, for October, 1876. It is interesting in its medico-legal, as well as in its pathological aspect.

Luigi Marchini, aged 46, a carter, of fairly robust physical constitution, free from hereditary or acquired taint, had enjoyed good health throughout his life, with the exception of an eruptive fever. On the night of May 9th, 1875, while running away from some one who was pursuing him, he fell from a height of a little more than three *mètres* (about ten feet). Immediately, or in a few moments after the fall, he was stabbed; receiving in the posterior part of the neck, a little to the left near the spinous processes of the fifth and sixth cervical vertebræ, a wound two centimetres (0.8 inch) long, in the direction of the axis of the body, and reaching to the superficial layer of muscles. The wound had evenly cut edges, and was as extensive at the base as above. The injured man remained on the ground, unable to rise. He had complete paralysis of the right arm and lower limb; he said that he did not lose consciousness, except perhaps for a very short time, and remembered and related with tolerable clearness what he did and heard before and after the accident. The only thing which he ignored was the wound in the neck. When questioned on this, he said with surprise that he had not perceived it, and that he did not feel pain in any part. He was placed on a litter and carried to the hospital. On his admission, he was found to have also received three lacerated and contused wounds on and near the left parietal eminence. There was complete right hemiplegia, affecting the thoracic and abdominal muscles: the right foot was extended almost in a straight line with the leg. The wounds on the head were apparently caused by his fall: they were superficial, and gave little pain.

The patient had his head turned slightly towards his right shoulder; all attempts to straighten the neck caused very severe pain, and were unsuccessful. Nevertheless, no lesion of the spine could be detected by careful examination of the neck. It was, however, observed on inspection of the right side of the neck, that the muscular masses were all contracted and permanently rigid; giving rise to the belief that the bend in the neck was due to this condition rather than to dislocation or fracture of the vertebræ.

The patient, as has already been said, was in full possession of his intellectual faculties, with calm physiognomy; he spoke freely; and it was only during energetic contraction that any of the facial muscles could be perceived to be removed from the influence of the nervous centres. In smiling especially, the asymmetry of the face was observed. The pupils were normally dilated: they both contracted under the action of a slightly more intense light, and the only notable point was, that the left pupil returned to the normal state of dilatation sooner than the right.

Speech was clear and distinct, and deglutition easy; the tongue could be moved freely, and lay straight; the uvula was exactly perpendicular, and no asymmetry could be perceived in the soft parts at the back of the mouth.

The immobility of the right side of the chest was at once apparent; an alternating motion, not real but apparent, was communicated to the paralysed side during expiration. The heart beats were perfectly normal, 76 to 80 in the minute, the respiration being 25 or 26; but about twenty-four hours after the accident, and for three or four days subsequently, the radial pulse was 94; after which it fell to normal, and subsequently still lower.

The bowels were much constipated, requiring the use of drastics; the catheter was not required.

On the right side there was complete abolition of motion both in the upper and in the lower limb. There was slight hyperalgesia of the arm, and much in the thigh and leg, and especially in the foot; as only bringing the hand or any object near this part, the patient, who was naturally tolerant of pain, cried out. The electric excitability of the muscles was scarcely appreciable in the arm, but was very distinct in the lower limb.

On the left side there was freedom of voluntary muscular motion, especially in the lower limb, with almost total loss of sensation of touch, heat, and pain over the whole side. The anaesthesia extended to the left side of the neck; the patient could not perceive when the wound was touched.

The patient remained in the hospital up to the time of his death, five months and eighteen days after the accident. The right hemiplegia remained the same throughout; and the hyperalgesia, especially of the terminal portion of the lower limb, was quite as intense on the last days of life as at first.

The treatment was limited to few remedies. On the first two days some leeches were applied near the spinous processes of the lower cervical vertebræ, and four cupping glasses. Iced compresses were also applied to this region for a week. A drastic was given to overcome the obstinate constipation which existed at first, and from time to time infusion of senna was administered as a laxative. Electro-magnetism was several times applied to the paralysed side, but without effect. Extract of *nux vomica* and of *rhus radicans* was prescribed in increasing doses, but without any therapeutic result.



On two occasions, at the end of June and beginning of July, there were indications of a return of voluntary motion in the right fingers and toes; the appearance, however, was only transient, and consisted in fact of very limited motion under a strong exercise of the will.

In the beginning of September, the patient complained of pain in the right knee, which was found to be of higher temperature than normal, with slight tumefaction around the joint. The pain was relieved by the application of cold compresses. At the same time the gums became painful and swollen, and bled easily. Perchloride of iron was prescribed, but without effect. Besides the knee, the other joints of the paralysed side were evidently more or less increased in size; in the elbow and knee an obscure sensation of fluctuation was perceived on palpation.

On the morning of October 27 the patient died, and a necropsy was made twenty-six hours afterwards.

No morbid change was found in the cerebrum and cerebellum; these were, however, anæmic throughout, which indeed was the general condition of the viscera. There was a fracture of the sixth cervical vertebra at the upper margin of the right lamina, and of the articular process of the same side. A nearly triangular splinter was broken off, the base of which, about eight millimetres (three-tenths of an inch) wide, was supported by the right articulating process, while the apex lay in contact with the spinal cord almost in a parallel line with the inner margin of the body of the same vertebra. The point was closely adherent to the dura mater, and a cicatrix corresponding to it was found in the spinal cord. The fragment of bone was about a millimetre in thickness.

In explaining the mechanism of the fracture, Dr. Alessandrini believes that, in the act of falling, Marchini had his head bent forwards and slightly to the left, this being the result of a voluntary muscular effort to reduce the force with which the head struck the ground. The head in fact escaped the shock of impact, which was sustained by the cervical spine, which, in the state of greatest anterior tension and muscular contraction, gave way where the tension was greatest.

Immediately below the fragment, as far down as the seventh cervical vertebra, were the remains of a hæmorrhagic clot, apparently not of sufficient extent to produce much compression. It was about three centimetres in length, and half a centimetre in diameter, and was nearly cylindrical. It was not, in Dr. Alessandrini's opinion, sufficiently large at this time to press much on the medulla; but, he remarks, the interval of time between the injury and the patient's death must be remembered.

In commenting on the case, Dr. Alessandrini discusses the question, How much is to be attributed to the wound, and how much to compression of the spinal cord, in regard to the manifestations of functional disturbance of the centres of nerve-supply? There is no doubt that to the first is to be referred the hemiplegia which immediately followed the fall, and that all the other symptoms of injury of the cervico-brachial portions of the cord were due to the latter.

The fragment of the sixth vertebra had not produced any apparent alteration in the anatomical relations of the spinal column. That it had divided the dura mater there was no doubt; and that it had done so completely was easily enough shown by the

fact that the point of the bone, covered with some newly formed fibrous tissue, projected slightly on the inner surface of the dura mater. But as the edges of the wound in the membrane were closely united to the margins of the fragment, it was rather difficult to determine exactly the real extent of the wound of the dura mater. If the fracture occurred in the way suggested above, it must be believed that the bony fragment was formed like a bleeding lancet at the moment of fracture, and that by a scythe-like movement of the point from the periphery towards the centre it passed further than appeared at the necropsy. It is true that the articulating processes of the vertebrae preserved their anatomical relations; but if its proper value be assigned to the elasticity of the ligaments and also of the bones, it will appear probable that this fragment of bone at the time of detachment might have produced partial division of the medulla, just as the knife of the vivisector would do.

Of the vestige of cicatrization in the medulla, no better idea can be given than by imagining the medulla contracted almost in a semicircle by a silk thread.

In the experiments of Eichhorst and Naunyn on the regeneration and changes after complete destruction of portions of the spinal cord, mention is made of liquid collections along the posterior and lateral posterior columns of the medulla above the lesion; and this is regarded by Eichhorst as arising from interruption of the course of the lymphatic vessels. Dr. Alessandrini did not find any liquid when he divided the cicatrix; but he says it might have been there, otherwise it would be difficult to explain the swelling of the part.

He regrets that no microscopic examination was made.

Nothing worthy of note was observed in the thoracic or abdominal viscera. The joints of all the limbs on the right side were found filled with blood-clots of a dark-red colour. The joints on the left side were normal. Could the hyperalgesia, he asks, have had any influence on the vaso-motor nerves, stimulating them, and so producing slowness of circulation? The hæmorrhage in all the joints of the side of the body affected with paralysis and hyperalgesia, he says, is to him a new fact, of which he has not been able to find any other examples.

#### SÉE ON THE USE OF SALICYLIC ACID IN RHEUMATISM.

In a recent clinical lecture at the Hôtel-Dieu, Professor Sée dwelt on the uses of salicylic acid, which he had been using in that institution. An abstract of his remarks appears in the *Progrès Médicale*, December 16th. Salicylic acid was first employed to supersede carbolic acid for preventing putrefaction, arresting the development of bacteria, vibriones, &c., on the surface of suppurating wounds. The supposed parasitic nature of many general diseases caused some physicians to administer it internally in the eruptive fevers, typhoid fever, puerperal fever, purulent infection, erysipelas, &c.

The fall of the pulse and temperature which took place in most of the patients caused the same remedy to be given as an antipyretic in a great number of affections,—pneumonia, rheumatism, &c.

As an antipyretic, the action of salicylic acid is very inferior to that of digitalis or sulphate of quinine, the fall of temperature which it produces being less pro-

nounced and less constant. The only affection in which it has given results at present satisfactory is acute articular rheumatism.

Dr. Sée prescribes it to rheumatic patients in the form of powder, six grammes (90 grains) being divided into twelve powders: the patient taking one powder every hour. This mode of administration is preferred on account of the extremely disagreeable taste of the medicine. It may be prescribed in draught, but it must then be remembered that it is soluble in alcohol, but very slightly soluble in water. The salicylates of soda and of lime are soluble in water, but their therapeutic properties are not identical with those of salicylic acid.

There is scarcely any remedy the elimination of which is more rapid than that of which we are speaking: after a very short time it appears in the urine, where it may be readily recognised by the following reaction.

Place in a test-tube a very dilute solution of perchloride of iron, add a few drops of urine from a patient who has taken salicylic acid, and a beautiful intense violet precipitate is produced. We do not know what is the violet compound resulting from this reaction: clinically, however, the proceeding is not on that account of less value for detecting the presence of the remedy in the urine. On account of this rapid elimination, the medicine must be administered in fractional doses hour by hour.

The observations collected at the Hôtel-Dieu were made on five patients. All suffered from subacute rheumatism limited to some of the larger joints. In all of them, after the second day, the pain and swelling diminished and disappeared. In one of the five the remedy was suspended on the fourth day, as he appeared to be cured, but on the following day a relapse occurred necessitating a repetition of the treatment, which produced a definite cure, or at least coincided with it. None of the patients had either at the beginning or during the course of the treatment, any cardiac complications. Two of them presented phenomena attributed to intolerance of the remedy, continuous headache, insomnia, buzzings in the ears, &c. Dr. Sée compared these physiological phenomena with those produced by sulphate of quinine, the best medicine hitherto at our disposal against the different manifestations of rheumatism.

The strict ties which unite rheumatism with chorea, and which were demonstrated in a just measure by M. Sée, necessarily induced a trial of the salicylic acid in the treatment of the latter affection.

A patient, aged 17, affected with chorea, not severe it is true, was put under the same treatment as that of the rheumatic patients. After the second day she had headache and buzzings in the ears, then some fever, the cause of which could not be discovered, and which necessitated a suspension of all treatment. The fever fell the next day but one, and the patient's choreic movements were manifestly less intense. Was the result obtained due to the remedy employed or to an intercurrent fever? This question is one difficult to solve, and one on which Dr. Sée has not given an opinion.

In concluding the lecture, Dr. Sée remarked that though the results obtained were satisfactory, we must not therefore draw exaggerated conclusions. All the patients treated were affected with subacute rheumatism limited to a small number of joints. Before giving a final judgment, the effect of salicylic acid must be observed on patients affected with acute

general articular rheumatism with considerable febrile disturbance.

This subject Dr. Sée proposes to take up and to develop, when a sufficient number of observations enable him to form an opinion on this new agent for the treatment of rheumatism.

W. DOUGLAS HEMMING.

## SMITH ON THE PHYSIOLOGICAL ACTION OF SANGUINARINA.

IN the *American Journal of the Medical Sciences* for Oct. 1876, is an account by Dr. R. M. Smith, of Philadelphia, of his researches into the physiological action of sanguinarina, the alkaloid of *Sanguinaria Canadensis*.

He first remarks that in the investigation of the physiological action of any drug its simple administration is of no avail, but that we must by a process of exclusion ascertain which structures are especially affected by the drug in question.

Dr. Smith first made some experiments on the general effects of sanguinarina. As the result of these experiments, it appears that the most marked feature in poisoning by sanguinarina is complete prostration and adynamia, which is usually preceded by a state of excitement, in which occur clonic convulsions. In cold-blooded animals, a small dose produces first increased expiratory excitement and dilatation of the pupil. The breathing then becomes slower, and convulsions usually occur, or a spasmodic rigidity of all the members takes their place. After a larger dose, the animal may pass into collapse immediately. On opening the chest, the heart is either found at rest in systole or beating feebly. It responds fully to electricity, but the other muscles are more strongly irritable, except near the point where the poison was injected, where contractility is almost lost. *Post mortem* examination shows no lesion, but nervous congestion. In warm-blooded animals, collapse always occurs sooner or later. Hypodermic injection causes local irritation and muscular incoordination. If thrown into the stomach, the poison causes nausea and vomiting; and sometimes, when it is given hypodermically, emesis is produced. Profuse and long continued salivation is a constant symptom. *Post mortem* examination reveals no lesion, but venous congestion and entire cessation of intestinal peristalsis. The pupils are dilated.

Dr. Smith next studies the cause of the adynamia which may be produced by paralysis of the motor or sensory nerves, or of the muscles themselves, or by direct action of the poison on the spinal cord. Each of these modes he studies in turn. On the motor and sensory nerves experiments prove that sanguinarina has no effect, and further experiments prove that it is from its action on the spinal ganglia and the muscles that adynamia is produced. It is also by its action on the spinal cord that convulsions are produced. The next point studied is the influence of the poison on reflex action, which was investigated after the method of Turck, of Vienna. The result of experiments in this direction was to show that sanguinarina decreases reflex excitability, and that section of the cord just below the medulla causes this depression to disappear, and permits the reflex excitability to approach the state in which it was before the poisoning. This can only be explained by the excitant action of the drug on Setschenoff's centre (inhibitive of reflex action); because the



division of the cord below the medulla removes this centre.

In investigating the effects of the drug on the circulation, Dr. Smith made fifty experiments on cats, dogs, and rabbits. In some of these chloroform was given as an anæsthetic, in others curare was employed. The particulars of those in which chloroform was employed are omitted on account of the similarity of action on the vascular system between sanguinarina and chloroform. In almost all instances, however, a small amount of sulphate of morphia was injected hypodermically to deaden sensibility, and was not found to interfere with the characteristic working of the sanguinarina. Of sixteen experiments made to determine the general action of the drug, the result of those in which no curare was used showed, sooner or later, a decided fall of blood-tension and slowness of the pulse, a condition produced immediately by a large dose, usually followed by a rise of both; while, if smaller doses were given, the rise appeared first. In those instances where a fall occurred first, followed by a rise, the rise was accompanied by struggling. The question then arose as to the relation between the struggling and the increased blood-tension. In order to determine this, ten experiments were made under curare, and from them it appeared that the secondary rise of blood-pressure, which occurred after a large dose of sanguinarina was due to the struggling which always accompanied it, because, when curare prevented struggling, no such rise appeared. Similarly, after curare was given the pulse always fell. Sanguinarina then appears, in small doses, to cause a rise in blood-pressure by irritation of those nervous centres through whose paralysis its subsequent fall is effected. The struggling has been shown to be of spinal origin, and now the general action of the drug on the circulation has been shown to reduce the frequency of the pulse, and to diminish blood-tension. The question now comes, through what nervous agency these results are produced. The pulse may be reduced through central or peripheral irritation of the pneumogastrics, or by directly acting on the ganglia of the heart; the blood-pressure may be reduced by paralysis of the vaso-motor system, or by debility of the cardiac ganglia. With respect to the vagi, if sanguinarina influence them at all, it must be by causing either irritation or paralysis. The experiments quoted prove that neither of these two effects are produced on the pneumogastrics. The reduction of the pulse, therefore, must be due to action on the heart itself. With respect to the vaso-motor system, the intensity of the action may be produced by either, 1, loss of function of the afferent, the sensory nerves; 2, by diminished tonics of the vaso-motor centre itself; 3, by loss of function of the efferent vaso-motor fibres. Both the afferent and efferent nerves are found to remain intact after the administration of sanguinarina; and it is evident that the drug causes a state of diminished tonus of the vaso-motor centre. The action of the drug on the heart is next studied, and it is shown that it does not act on any of the cardiac nerves, but does act on all the muscles; therefore it is reasonably concluded that it produces typical effects by action on the muscular tissue of the heart. On the respiratory movement the effect of sanguinarina is to cause slowness, which is due to a paralyzing influence on the respiratory centre; that it is not due to any effect on the pneumogastrics, is proved by the fact of its occurring after section of those nerves. On the muscular system sanguinarina produces a want of contractility,

whether applied locally or introduced into the circulation.

The conclusions which Dr. Smith draws from 153 experiments made with this alkaloid on cats, dogs, rabbits, frogs, guinea-pigs, pigeons, &c., and with which he concludes an admirable and exact account of his very valuable and carefully executed experiments, are as follows. 1. Sanguinarina destroys life through paralysis of the respiratory centre; 2. It causes clonic convulsions of spinal origin; 3. It has no effect on either the motor or sensory nerves; 4. It causes marked adynamia and prostration from its depressing action on the spinal ganglia and muscles; 5. It decreases reflex excitability through irritation of Setschenoff's centre, and by ultimate paralysis of the spinal ganglia from large doses; 6. It produces in cats, dogs, and rabbits, a fall of pulse and blood-pressure, the fall of the latter being preceded by a temporary rise after the administration of proportionately small doses; 7. The fall of blood-tension is caused by a paralysis of the vaso-motor centre, and by a paralysis of the heart itself, probably of its muscular structure; 8. The temporary rise in blood-pressure is due to irritation of the vaso-motor centres, previous to paralysis by small doses; 9. The reduction in the pulse is due to direct action of the poison on the heart through paralysis of its motor power; 10. Sanguinarina has no action on the liver; 11. It causes marked salivation; 12. It renders the respiratory movement slow by prolonging the pause after expiration; 13. This reduction is caused by loss of tonus of the respiratory centre; 14. Small doses cause an irritation of the respiratory centre, and consequently an increase in the number of respiratory movements; 15. Applied locally, sanguinarina causes complete paralysis of striped muscular fibre; 16. It always causes dilatation of the pupil; 17. It is an emetic; 18. It always lowers the temperature; 19. When introduced into the circulation, it diminishes muscular contractility.

[It is evident that we have in sanguinarina a powerful medicinal agent. It is to be hoped that some English physicians will test its therapeutic effects, basing their experiments on the indications laid down by Dr. Smith, whose paper is an admirable model of thorough physiological investigation.—*Rep.*]

## ANATOMY AND PHYSIOLOGY.

CYON ON THE PHYSIOLOGICAL RELATIONS BETWEEN THE ACOUSTIC NERVE AND THE MOTOR APPARATUS OF THE EYE.—According to E. Cyon (*Gaz. Méd.*, 1876, No. 17) the movements of the eyeball, observed after injury to the semicircular canals, are the direct and immediate effects of this injury. By stimulating the horizontal canal in the rabbit, the eye of the same side is directed backwards and downwards, just as after stimulation of the anterior vertical canal, stimulation of the posterior vertical canal causes a deviation of the eye forwards and upwards. Movements are always observed in the other eye, but in the opposite direction. The pupil of the eye on the side stimulated contracts, while it remains dilated on the other side. At the moment of stimulation the movement of the eyeball is tetanic; directly thereafter oscillatory movements take place in the opposite direction. They succeed each other about twenty times per minute, and scarcely last longer than half a second.

These oscillatory movements disappeared after

section of the acoustic nerve on the other side. A new stimulation of a semicircular canal only produces tetanic contraction of the eyeball.

Stimulation of one acoustic nerve causes rolling movements in both eyes. Section of one acoustic causes a strong deviation of the eye of the same side downwards, of the other eye upwards. After section of the other acoustic this deviation ceases. Stimulation of the acoustic nerve in the rabbit causes rolling movements in the long axis of the body, towards the injured side; destruction of both nerves causes quite irregular movements. If the animals survive the double section, these irregular movements cease in from six to ten days; there only remains a slight uncertainty; the animals seek support, and only move about unwillingly. If such a rabbit be placed on a rotatory machine, the phenomena described by Purkinje and Mack are observed, which are not due to displacements of the endolymph, but to disturbances in the circulation in those intracranial vessels lying furthest from the axis of rotation. The disturbances in the equilibrium after injuries to the cerebellum are, according to Cyon, to be largely ascribed to injury of the fibres of the acoustic nerve passing through this organ.

KUNKEL ON THE RELATION BETWEEN THE QUANTITY OF ALBUMEN TAKEN IN THE FOOD, AND THE SULPHUR EXCRETED IN THE BILE.—A. Kunkel (*Bericht der Säch. Acad. der Wissensch.* 1875) collected the bile during the whole period of the experiment in caoutchouc bags. Of course, on account of the lower pressure under which the bile is excreted, care must be taken that there be no resistance to its outflow.

In the first series of experiments, coagulated lamb's and calf's blood was the nutriment. In five days the amount of sulphur taken with the blood was 3.245 grammes; excreted by the bile 0.615, and by the fæces 0.670. But as, after the occlusion of the bile-duct, the sulphur in the fæces must essentially be derived from the undigested albumen, the 0.67 must be deducted from the sulphur of the food; 2.575 grammes were therefore absorbed, of which 0.615 was excreted by the bile—23.8 per cent. This number is, however, too high, as the animal had lost 460 grammes weight; i.e., besides the food, had also used up other bodies containing sulphur.

In the second series, where flesh was given as the food, 14.7 per cent. sulphur was excreted in the bile; in the third series, 17.3 per cent. By taking the individual days, it appears that the amount of sulphur excreted in the bile, relatively to that of the food, continually increases. In the second series, the per centage on the second day was 9.2; then 7.7, 9.6, 12.7, 21.3, 30.2. In the third series, it was 13.1, 19.3,—24.6. As the amount of food taken during the latter days of the second series was much less than at the early period of the experiment, it follows that the increase of the sulphur excreted by the bile does not occur on the same day as the albumen is supplied, but considerably later. Similar relations hold for the sulphur of the urine.

SCHMIDT ON THE RELATION OF CHLORIDE OF SODIUM TO CERTAIN ORGANIC FERMENTATIVE PROCESSES.—A. Schmidt (*Pflüger's Archiv*, Band xiii., p. 93, and *Centralblatt für die Medicinischen Wissenschaften*, No. 47) continues his researches on the ferments.

I. *The Coagulation of Milk by Rennet.* If an extract of the mucous membrane of the stomach of the

calf (prepared by .25 per cent. hydrochloric acid) be by dialysis freed from all soluble salts, and if milk be similarly freed, then if the two fluids be mixed (at 17 cent. = 62.6 Fahr.), the coagulation, i.e., the separation of casein, takes place at once, at a somewhat lower temperature (15 cent. = 59 Fahr.) in 25 seconds. It is therefore clear that the soluble salts, and above all common salt, delay and prevent the coagulation of milk by rennet.

II. *The Digestion of Albuminous Bodies by Pepsin and Hydrochloric Acid.* Coagulated albumen, freed by dialysis from its salts, is much more easily dissolved by the gastric juice than the fibrine (even when swollen up) usually employed. Even the albumen, coagulated by heat and separated in flakes from diluted egg-albumen, is dissolved more rapidly than the albumen coagulated within the shell of the egg. In this case, it does not depend alone upon the form in which the albumen is excreted, though this is more favourable in the former case, but essentially upon the amount of salts present. For, if the solid coagulated albumen be rubbed down finely with water, it is still more difficult to digest, and the easy digestibility of the flocculent albumen may be set aside by the addition of a small quantity of chloride of sodium. The addition of 0.5 to 0.6 per cent. of chloride of sodium to a digestive fluid poor in salts, increases the time required for digestion from 3 to 10 times. Solutions of peptones are only precipitated by tannic acid in the presence of salts; and the amount of pepsin in the stomach of newly born animals is less, but not absent, as indicated by Hammarsten.

III. *The Coagulation of Fibrin.* The author has already shown that the amount of fibrin obtainable from a fluid increases, *cæteris paribus*, within certain limits, with the amount of fibrino-plastic substance contained in it or added to it, but beyond these limits it diminishes. The same is true for the quantity of the salts in the fluid. The simplest experiment to show this is to dilute blood-plasma with water. From the diluted plasma less fibrin is excreted than from that undiluted, but the amount increases with the addition of chloride of sodium; and when the amount of chloride of sodium in the diluted fluid reaches 1 per cent., the amount of fibrin excreted is almost as great as in normal plasma. With 2 to 2.5 per cent. the amount is much less; and if still more chloride of sodium be added, the plasma remains fluid. In these and all other experiments on coagulation a small quantity of a solution of hæmoglobin was added. The time of coagulation is thereby very much shortened, and a re-solution of the fibrin does not take place, which, without the addition of hæmoglobin, is often the case. The addition of chloride of sodium, however, never causes coagulation in a fluid, which by the addition of fibrin-ferment alone does not coagulate. It therefore seems, from these and the author's former experiments, that the amount of fibrin obtainable from a fluid depends upon several conditions: 1. The amount of the fibrin-regenerators; 2. Quantity of the salts; 3. Amount of alkalinity; 4. Temperature. The influence of the quantity of ferment and that of hæmoglobin, on the amount, is still doubtful. What now happens when the fibrin-factors and the ferment are brought together without the presence of the salts? For these experiments, the blood plasma of a horse was filtered in the cold, treated with 0.5 per cent. of soda, and then subjected to dialysis. The addition of soda was necessary in order to prevent the coagulation during the dialysis. In such a solution, freed from salts, on the addition of the fibrin ferment there is formed a product insoluble in water,



and only soluble in an excess of alkali. It is not fibrin, but in the presence of neutral salts in an alkaline solution it becomes fibrin. If no excess of alkali is present, the whole of the globulin-like substances contained in the fluid, even to traces, pass into this product, so that, on diluting the filtrate with water, and passing a stream of carbonic acid through it, only a slight opalescence is obtained. Concentrated salt solution, previously added to fluids capable of coagulating prevents this entirely, while the alkaline solution of the above-named product is at once precipitated by concentrated solution of chloride of sodium. But the fibrin so precipitated differs from ordinary fibrin. If soda (.002 to .003 per cent.) be added to the blood-plasma just before coagulation, the fluid becomes changed into a thick slimy tenacious mass.

**HEISS ON THE EFFECT OF LACTIC ACID ON THE BONES.**—Can the introduction of lactic acid into the intestine of an animal remove inorganic constituents from the bones? This question was answered in the affirmative a short time ago by Heitzmann, who asserted that, on feeding graminivorous animals with lactic acid, osteomalacia could be produced; and that in flesh-eaters, first rickets, and then osteomalacia occurred. E. Heiss (*Zeitschrift für Biolog.* Band xii) tested the above assertions on a dog. The experiments lasted over a year, and in all the animal got 2,286 grammes of lactic acid. On examining the bones they were found to be normal throughout. Lactic acid was not present, or if so, only in traces, in the urine. The carefully conducted analysis showed that the lactic acid had removed no lime from the body.

**SEEGEN ON THE CONVERSION OF GLYCOGEN INTO GRAPE-SUGAR BY SALIVA AND PANCREATIC JUICE.**—J. Seegen (*Centralblatt für die Medicinischen Wissenschaften*, No. 48) remarks that in all physiological text-books these two secretions are said to transform glycogen rapidly and completely into grape-sugar. The author finds that this is not the case, even though the glycogen is obtained in various ways. The mixture of glycogen and the ferment was allowed to stand for twenty-four hours; still the solution, after complete fermentation, contained only a fraction of the grape-sugar which ought to have been formed, if the whole amount of glycogen dissolved had been transformed into grape-sugar. The amount of sugar present varied; when saliva was the ferment employed, it varied from 34 to 41 per cent.; if the pancreas extract were employed, it was 45 to 48 per cent.

**ALEXANDER ON THE NERVES OF THE DURA MATER.**—W. T. Alexander (*Arch. für Micr. Anat.* xi., p. 231, and *Centralblatt für die Medicinischen Wissenschaften*, No. 20) has proved the existence of two kinds of nerves in the cerebral and spinal dura mater of all animals investigated by him. He employed the gold method. There are vaso-motor nerves, and nerves proper to the tissue of the dura mater.

The former accompany the small arteries, and give non-medullated fibres to the walls of the vessels, though their actual terminations have not yet been traced. The nerves proper to the dural tissue, either proceed directly from the larger trunks, or from the nerves surrounding the vessels. After repeated division, they split into non-medullated fibres, which are so joined to each other, as to form a narrow meshed plexus. This nervous net-work lies in the tissue of the dura mater itself, and has nothing to

do with the vessels. Whether there is a genuine network or only a plexus could not be accurately determined. This net-work was nowhere so dense as in the cornea. The author did not succeed in tracing any connection between the nerve-fibrils and the cellular elements in the dura mater.

**ELISCHER ON THE NERVES OF THE OVARY.**—J. Elischer (*Centralblatt für die Medicinischen Wissenschaften*, No. 50, 1876) has investigated the ovaries of the cow, sheep, and rabbit. The organs were hardened for a short time in a 2 per cent. solution of ammonium bichromate, the fluid being changed daily, and then coloured with chloride of gold and sodium after the manner of Gerlach and Boll. In all cases, fine medullated nerve-fibres were found to pass into the stroma on the vessels. From the middle of the hilus they branched in two ways. One set of medullated fibres divided dichotomously in their passage to the follicular layer at the periphery, and there formed a net-work of fine non-medullated fibres, constituting a plexus around the follicle; another set formed a coarsely meshed arrangement around the vessels. The peripheral layer of the membrana granulosa in large follicles is surrounded by a fine net-work of nerve-fibres. The author asserts that he has seen fine branches proceed to the nuclei of the cells of the membrana granulosa.

**ROLLETT ON THE TERMINATION OF NERVES IN TENDON.**—A. Rollett (*Wiener Acad. Sitzungsbericht*, vol. lxxiii) has investigated the mode of termination of the nerves in the tendon of the sterno-radial muscle in frogs at its insertion into the upper arm. The agent employed to treat the tendon with was a half per cent. solution of perosmic acid, followed by hydrochloric acid (1 in 1000). A plexus of medullated nerve-fibres exists and ends within the tendon. The nerves divide dichotomously and end in peculiar structures, having much resemblance to the end-plates of muscle. From the fact that no reflex action could be discharged from this tendon, it seems probable that the direction of the motion in the nerve is centrifugal, and not centripetal.

WM. STIRLING, D.Sc., M.D.

**NOTHNAGEL ON THE FUNCTIONS OF THE CEREBELLUM.**—Professor Nothnagel (*Virchow's Archiv*, Oct., 1876), in continuation of his papers on the function of the brain, publishes an account of his researches on the functions of the cerebellum, the results of which he sums up as follows.

1. The cerebellum arranges definite motor processes; its function is also to some extent motor. This relation to motor processes is shown both by irritation and by destruction.

2. All the phenomena show an intimate functional (as well as anatomical) connection between the two halves of the cerebellum.

3. The complete destruction of the same part of the cerebellum which gave rise, when irritated, to the before-mentioned motor effects, was not followed by any "negative phenomena" (*Ausfallserscheinungen*, Goltz).

4. The destruction of one hemisphere, or of both alone, or of the anterior and superior part of the vermiform process alone, produced no abolition of co-ordination. No motor irritation phenomena followed the mechanical irritation of these parts.

5. The recognised destruction of co-ordination was produced only by such an injury as implicated at the same time the depth of both the hemisphere and the vermiform process.

He promises further observations on the special connection of these motor functions with those of the brain proper, and also a discussion of the co-ordinating function of the cerebellum.

**ONIMUS ON THE FUNCTIONS OF THE PNEUMOGASTRIC AND THE SO-CALLED INHIBITORY NERVES.**—M. Onimus (*Comptes Rendus*) publishes the results of a series of experiments upon the effects of electrical stimulation of these nerves. He says that an ordinary Faradic current is interrupted 30-35 times in a second, and that corresponds pretty well with the number of nervous shocks transmitted along special nerves, so that striped muscles usually respond well to the stimulus; but that automatic and rhythmically acting organs require some numerical relation to be observed between their rhythm and the stimulus, or the effect will be perturbation instead of increase of function. The author, as well as Charles Legros, found that, if the pneumogastric nerve were stimulated by a current interrupted at long intervals, no arrest of the heart's action took place, and that for this latter result 16 or 18 shocks per second were required for warm-blooded animals.

From new experiments made by the author, he announces that by even and moderate stimulation of the heart, at intervals corresponding somewhat to the existing cardiac rhythm, stronger contractions are produced, and that by this means the hearts of animals nearly poisoned by curare or chloroform can be re-awakened to functional activity.

The peristaltic action of the intestines, which is arrested by the ordinary Faradic current, was increased if the interruptions were somewhere about equal to the normal rhythm of 15 or 18 per minute: for this result to be obtained it was found necessary that the intestine should not be empty.

The vaso-motor nerves he found to be similarly influenced, currents interrupted at long intervals producing not tonic contraction, but dilatation with increase instead of lowering of the temperature.

He concludes that the nerves of vegetative life and of unstriped fibre, above all when they belong to organs which have rhythmic, co-ordinated, and automatic movements, do not respond to artificial stimuli in the same way as spinal nerves. When the excitations become too numerous and too rapid, they cease to provoke functional acts, and become causes of perturbation. The phenomena of arrest which have been obtained in these conditions are the results of this perturbation. Moreover, it seems from his experiments that the alleged depressor nerves come under the general laws of action of all the nerve-filaments, their physiological excitation provoking always the activity of the organs to which they are distributed.

ROBERT SAUNDBY, M.B.

**DALLINGER ON THE EXISTENCE OF ATMOSPHERIC GERMS.**—The Rev. W. H. Dallinger publishes in the *Monthly Microscopical Journal* for December, the results of a series of experiments with a sterile putrescible fluid exposed alternately to an optically pure atmosphere and to one charged with known organic germs of extreme minuteness. He recalls the observation of Professor Tyndall, that in an optically pure atmosphere—i.e., one in which, by the gravitation of its particles, these cease to be light-bearing, and the ray of the electric light is consequently interrupted—sterilised fluids which have been filtered, remain sterile. When the same sterilised fluids are exposed to an atmosphere charged in the usual manner with motes, they soon become

putrescent. Mr. Dallinger comments on the benefit of being able to employ this method of demonstrating the presence or absence of objects evidently associated with dust-particles and frequently ultramicroscopic. The doubt as to the very existence of bacteria-germs rendered these bodies useless for experiment; but, as the result of previous observations, Mr. Dallinger was able to employ an absolutely sterile, but perfectly nutritive and putrescible fluid, in which the germs of monads were known to be present. Thus, by exposing a solution containing "springing monads" and "calycine monads", to a temperature 10° higher than was necessary to kill the adult, and by keeping the heat up till the evaporated moisture left the residuum dry and flaky, he obtained a dust containing germs of these two monads. He sprinkled with this dust the air of a chamber such as that used by Professor Tyndall, and placed in the chamber six uncovered and four covered cups, containing Cohn's fluid. At the end of twenty-four hours the covered cups were laid open, and in four days more the six vessels which had been open from the beginning, were examined. The "calycine monad" appeared in full vigour in every drop; the "springing monad" in only ten drops out of fifteen. Two days afterwards, the four vessels which had been for sometime covered, were also examined. The calycine monad was wholly wanting in three of them; the springing monad was present in all. Mr. Dallinger explains these phenomena, by showing that the germs of calycine monads, being the heavier and larger, would naturally fall first. He confirmed this statement by a second observation with the germs of the calycine and the "uniflagellate" monad, the smallest known by the writer.

Mr. Dallinger considers the evidence conclusive, that in air which is demonstrated to be optically pure, sterilised putrescible fluids remain so; while, in air where the shining of the electric ray shows the existence of motes and germs, such fluids undergo rapid putrescence and produce corresponding low forms of life. He also shows that these germs fall through the air at a rate proportioned to their size.

BEVAN LEWIS.

**TRIPPIER ON THE DIFFERENT ACTION OF THE RIGHT AND LEFT PNEUMOGASTRIC NERVES.**—At the meeting of the *Société de Biologie* of Paris, Dec. 9th (*Progrès Médical*, Dec. 16th, 1876), M. Tripiér read a paper on this subject. He first related experiments which he had made with M. Arloing, from which it appeared that the right pneumogastric acts more especially on the heart, and the left on the lung: but he remarked that variations exist according to the species of animals and individuals. Section of one of the pneumogastrics could cause death. There are extant at least two cases of death in man after division of the right pneumogastric. In the ass, in twelve divisions M. Tripiér observed seven deaths, four times from division of the right, and three times of the left; in the rabbit, in nine divisions, three deaths, all from the right; in the horse, on the other hand, in more than forty divisions only one death took place, and that was after division of the right pneumogastric. It appears that in some cases the cause of death is found in paralysis of the lower part of the œsophagus, to the consequent accumulation of food in that part of the digestive tube, and its penetration into the air passages. In ligature of the large vessels of the neck, it would be dangerous to include the pneumogastric nerve.

W. DOUGLAS HEMMING.



STROGANOFF ON LYMPHATICS IN THE INTERNAL COAT OF THE AORTA.—Stroganoff (*Archives de Physiologie*, July, 1876) tests the accuracy of the descriptions given (Langhans, Ranvier, and Koster) of the lymphatic channels (*Saftkanälchen*) in the sub-epithelioid laminated connective tissue which forms the internal coat of the aorta. Having repeated the various modes of staining and injecting, he comes to the conclusion that the various networks, brought to light by the known methods, depend upon the irregular lodgment of the colouring matter in folds of the delicate lining membrane.

PARKER AND BETTANY ON THE PRIMARY ELEMENTS OF THE SKULL.—At a recent meeting of the Cambridge Philosophical Society (*Nature*) Mr. Bettany brought forward some of the ideas resulting from Professor Parker's most recent researches, which will be embodied in a forthcoming work on the *Morphology of the Skull*, by Messrs. Parker and Bettany. A fundamental point in researches of this kind appears to be the question what are axial and appendicular elements in the skull. For some years past, Professors Huxley and Parker have regarded the primary rods or *trabeculae* occupying the base of the forepart of the skull as being the foremost of the series of facial or visceral arches (mandibular, branchial, and the like). In several types, although these *trabeculae* lie in the true base of the cranium, they are at an early stage more or less parallel with the visceral arches; and certain nerve-relations appeared to show a close similarity between them. But Mr. Parker now believes their facial nature cannot be maintained. They arise in tissue immediately beneath the brain cavity as the vertebræ arise beneath the spinal canal; the temporary flexure of the fore-part of the skull does not make this tissue other than axial. Every relation of the *trabeculae* proper is to the nervous centres, and cartilaginous growths continuous with them bound the cranium laterally just like the lateral occipital or vertebral regions. Mr. Bettany also directed attention to the nasal, prenasal, and antorbital regions of the skull, as probably showing rudiments of true appendicular parts in the anterior regions of the head. In the discussion which followed, Professor Humphrey cordially welcomed this rehabilitation of the *trabeculae*, having never been able to agree with Professor Huxley that they were facial in their origin. He could not doubt that the bones formed in them, the basisphenoid and presphenoid, were axial in character. He thought that further research would but demonstrate more clearly the vertebral or segmental theory of the skull.—Mr. Balfour thought research was not yet sufficiently advanced for a true estimate of the skull to be formed. Although the *trabeculae* might be morphological continuations of the basal cartilages in the hinder part of the skull, yet the greater part of the vertebræ and part of the base of the skull arose from an unpaired cartilaginous mass surrounding the notochord, while no such element existed in the anterior part of the skull. It appeared very possible that the lateral parts of the cranial floor behind were really equivalent to the base of the cartilages which formed the vertebral arches, and thus the *trabeculae* might similarly be regarded as only the basal parts of the continuous lateral wall of the skull.

BOLAU ON THE ANATOMY OF THE GORILLA.—Dr. H. Bolau, director of the Zoological Gardens at Hamburg, has recently had the fortunate opportunity

of dissecting three gorillas preserved in spirit, with the viscera intact. His results are just published in the *Abhandlungen aus dem Gebiete der Naturwissenschaften*, and they add much to our zoological information. The brain is figured by photography from three aspects, Dr. Pausch describing the convolutions. In all the specimens the liver exhibited the lateral fissures or incisions which are not found in man, the orang, the chimpanzee, or the gibbon, but in all the lower monkeys. This agrees with the descriptions given by Professors Huxley and Flower of the specimen in the Museum of the College of Surgeons; and serves to separate the gorilla from the rest of the anthropoid apes. [The caudate lobe is minute, and the Spigelian lobule of fair size. As in man only among the primates, valvulae conniventes, the transverse folds of the mucous membrane of the small intestines, so large in the Sumatran rhinoceros, are present, although they are not large.]

#### RECENT PAPERS.

On the Function of the Semicircular Canals and their Functional Relations with the Cerebellum. By Dr. A. Stefani. (*Lo Sperimentale*, December.)

#### PATHOLOGY.

NOTHNAGEL ON IMPLICATION OF THE SYMPATHETIC IN CEREBRAL HEMIPLEGIA.—Professor Nothnagel (*Virchow's Archiv*, Oct. 1876), reports a case of hemiplegia in which symptoms recalling the effects of section of the cervical sympathetic were produced. The hemiplegia supervened upon chronic Bright's disease; and the symptoms alluded to were contraction of the pupil, swelling of the eyeball, increased temperature, and increased secretion of the mucous surfaces on one side of the head. No necropsy is mentioned, and presumably death had not taken place. He connects with this Brown-Séquard's recent observation (*Archives de Physiologie*, 1875), that cauterisation of the cortex of the brain produced paralysis of the cervical sympathetic.

LEYDEN ON THE PATHOLOGY OF HYDRO-RACHIS.—Professor E. Leyden (*Virchow's Archiv*, Oct. 1876), discusses this subject in relation to two cases which he publishes; appended to his paper is a description of the normal development of the central canal, by W. Waldeyer. Dr. Leyden considers the internal and external forms to be identical, and maintains that both depend upon a delay in the development of the posterior columns, whereby a fetal condition persists. At about the fifth month the central canal reaches to the posterior periphery, but normally is gradually obliterated by the development of the posterior columns.

WEISS ON GIANT-CELLS.—Dr. Giovanni Weiss (*Virchow's Archiv*, Oct. 1876), says that giant-cells are formed by the melting together of many smaller cells; these smaller cells are granulation-cells. Giant-cells form also in connective tissue, and around blood-vessels; but, even though under the most favourable conditions for existence, they invariably undergo fatty degenerative metamorphosis. —[See Biegel on Giant-cells, LONDON MEDICAL RECORD, 1876, p. 304.]

KELSCH ON THE PATHOLOGICAL ANATOMY OF MALARIAL FEVERS.—A. Kelsch (*Archives de Physiologie*, September and October, 1876) has made careful observations on the numerical variations of the white and red blood-corpuscles, and says that :

1. During the attack the leucocytes diminish in much greater proportion than the red corpuscles, becoming in relation to these as  $\frac{1}{1000}$ ,  $\frac{1}{1200}$ ,  $\frac{1}{1500}$ , or  $\frac{1}{2000}$ ; that is to say, they diminish by a third, one-half, or more. The minimum ordinarily corresponds with the maximum distension of the spleen.

2. The diminution is rapid and continuous; during the first hour of the attack the leucocytes diminish unceasingly, reaching in this time as low as one-half or one-third of their number before the attack.

3. After the attack the number rises much more slowly than it fell; fifteen to twenty hours, or even one or two days, may pass before the physiological relation is re-established.

4. The swelling of the spleen and the disappearance of the leucocytes, though parallel facts, are not strictly proportional; the spleen may not be very large, although the numerical disproportion of the corpuscles is very great.

5. At the commencement of the attack there is a slight but instantaneous increase in the leucocytes; this statement is made with reserve, as the opportunities for verifying it have been few.

The author's observations on the blood during the persistence of the malarial cachexia with enlarged spleen are as follow.

1. There is a relative diminution of the leucocytes, varying from  $\frac{1}{800}$  to  $\frac{1}{2000}$ ; there were some exceptions to this rule.

2. The disappearance of the leucocytes was not quite proportional to the size of the spleen; the greater or less activity of the vicarious functions of the other blood-forming glands may explain this and the previous exception.

3. The induced current applied for ten minutes over that part of the spleen which extended below the costal margin always caused a diminution in the splenic dulness to the extent of from one to three fingers' breadth, and at the same time a temporary increase of the leucocytes, often double or triple. These phenomena only persisted some moments; after a few hours the original relations were resumed.

4. Under the influence of electrification, methodically continued for two or three months, the spleen gets smaller and the number of the leucocytes increases. At first the effect produced is more marked than later on. He believes electricity an useful adjunct in the treatment of these cases.

5. The red corpuscles also increase in number as the spleen decreases in volume.

6. During electrification of the spleen, he believes that the red corpuscles are diminished in number, but he has not been able to verify this statement to his own satisfaction, so that it is made with reserve.

BROUARDEL ON VARIATIONS OF UREA IN DISEASE OF THE LIVER.—In a paper, the first part of which appears in the *Archives de Physiologie*, July 1876, M. P. Brouardel gives a historical sketch of the views which have been from time to time published respecting the part taken by the liver in the formation of urea, from which it would appear that the great weight of evidence, both pathological and physiological, goes to show that a direct relation exists between the functional activity of the liver, and the excretion of urea, so that in all proba-

bility a great part of the urea which appears in the urine is formed in the liver. On account of the want of accurate clinical research upon this question, the author proposes to investigate the exact amount of urea excreted daily in various hepatic affections, and by a comparative analysis to arrive at a definite conclusion on the subject. 1. Of fatal jaundice (acute atrophy), no original cases are given; but from those recorded by Frerichs and others, it is regarded as satisfactorily proved that in proportion as this disease progresses the amount of urea steadily diminishes, and finally disappears. 2. In four cases of fatal jaundice produced experimentally in dogs by the hypodermic injection of phosphorated oil, the amount of urea excreted in twenty-four hours always diminished in direct proportion to the amount of phosphorated oil injected, and the severity of the general symptoms seemed also to vary with the amount of the poison used, and the diminution of urea. 3. In four cases of typhoid jaundice (*Ictère pseudo-grave*) with reduction of the size of the liver, the formation of the urea was lessened in the early stages of the disease, and during the typhoid it was observed that the urea was reduced to a minimum. The rather sudden disappearance of the severe symptoms (crisis), was found invariably to take place on the same day as the normal amount of urea appeared in the urine. 4. In three cases of simple spasmodic jaundice, the amount of urea seemed increased, and at the same time the size of the liver was augmented. The diminution in the amount of urea excreted in jaundice is thus made to bear a definite relation to the severity of the symptoms, and the gravity of the prognosis in any given case, and as a general rule it has been found that the formation of urea is in direct proportion to the size of the liver.

The paper is completed in the number of the same journal for September and October. M. Brouardel thus sums up the conclusions at which he has arrived, as to the variations in the excretions of urea in the different forms of liver-disease.

1. In acute yellow atrophy, the urea diminishes or disappears entirely.

2. In phosphorus poisoning, although each dose of the drug causes a temporary augmentation of the quantity of urea excreted, it slowly diminishes.

3. Some pseudo-malignant cases of acute jaundice have the primary diminution of urea followed by a urinary crisis, and plenty of urea is secreted; the liver, which at first seemed to become smaller, recovers its ordinary size.

4. In simple jaundice, the urea is not diminished, sometimes it is augmented. The quantity of urea is a means of prognosis.

5. In hepatic abscess, according to Parkes, at first the urea is augmented, but this requires verification; as the liver-substance is destroyed it diminishes, although fever may be present.

6. In biliary calculus, with obliteration of the duct and destruction of liver substance, the urea is diminished, especially during the attack of biliary colic. It is also diminished in hepatic intermittent fever.

7. In both the hypertrophic and the atrophic forms of cirrhosis, the urea is diminished.

8. In the congested and hardened liver of heart-disease, the urea is diminished.

9. In the fatty liver of phthisis, the urea falls to low figures.

10. Cancer and hydatids cause diminution of the urea when a considerable portion of the liver has been destroyed.



11. Active congestion of the liver causes increase of urea.

12. Lead-colic, with retraction of the liver during the attack, is accompanied by a small excretion of urea; as the liver regains its size, the urea augments.

13. Passing glycosuria is often accompanied by an increase in the urea excreted, or this may occur at the moment of its disappearance.

14. In diabetes, the excretion of urea reaches a figure unattained in any other disease.

From these conclusions he infers that the quantity of urea depends upon,

1. The integrity of the hepatic cells;
2. The greater or less activity of the hepatic circulation.

CHARCOT AND GOMBAULT ON THE DIFFERENT FORMS OF CIRRHOSIS OF THE LIVER.—The following is a short *résumé* of the propositions laid down by these authors, which are supported in their paper by various experimental, clinical, and pathologico-anatomical observations (*Archives de Physiologie*, September and October, 1876).

From a purely anatomical point of view, they say, three types of cirrhosis of the liver may be defined.

1. The connective tissue new formation commences in the interlobular spaces, where it forms at first islands of liver-substance; it soon invades each lobule individually, and destroys it systematically from its periphery to its centre. This occurs consecutively to a lesion of the bile-ducts, and to this type belongs, amongst others, that form recently described by Hanot (*Thèse inaugurale*, 1875) as hypertrophic cirrhosis with chronic jaundice.

2. The connective tissue forms rings which at first circumscribe together a more or less considerable number of lobules; this connective tissue, by its tendency to contract, compresses and causes atrophy of the substance of the lobules, but does not invade them. This form is essentially perilobular, and has its origin around the portal vein. To it belongs the ordinary granular cirrhosis of Laennec (the hob-nailed liver).

3. The new formation invades the whole liver at once, and in the depth of its tissues; the cirrhosis is here from the first both intralobular and extralobular; it disintegrates the liver-substance cell by cell. Though the authors cannot altogether collate the anatomical facts with the clinical phenomena in this affection, MM. Cornil and Ranvier, as well as M. Parrot, have found it in cases of infantile syphilis.

ROBERT SAUNDBY, M.B.

NOTHNAGEL ON REFLEX INHIBITION.—H. Nothnagel (*Archiv für Psychiatrie*, Band vi) observed that in several patients suffering from disease of the spinal cord, and who showed the knee-foot-phenomena" (patellar tendon reflex), he could by pressure on the crural or ischiatic nerve of the same or of the other side, cause this phenomenon to disappear on both sides. That in this case it is not due to an interruption from pressure on the nerve of a convulsive irritation proceeding centrifugally from the cord, the author concludes from the circumstance that pressure on the crural also inhibits the movements in the area supplied by the sciatic, and pressure on the nerve-trunk of one limb arrests the movements in the other. There is here rather a centripetal impression, for the pressure affects all the sensory fibres of the nerve-trunk. Stimulation of the expansions of the nerves in the skin (electric

stimulation, powerful compression of the limbs) was without effect. In those cases where impressions proceed from a pathologically altered cord, an abnormally strong stimulus must be applied to the trunk of the nerve in order to produce a reflex inhibition. Further, as the galvanic excitability of the nerve-trunks was not increased, nevertheless, as pressure exercised on them not only inhibited movements, but also discharged others, the author assumes that there was an increased *mechanical* excitability of the nerve trunks.

SOLTMANN ON THE FUNCTIONS OF THE BRAIN IN THE NEWLY BORN.—O. Saltmann (*Fahrh. für Kinderheilk.* Band ix, and *Centralblatt für die Medicinischen Wissenschaften*, No. 23, 1876) says that the chief differences in the structure of the brain of the adult and the newly born exist specially in the cerebrum, as the seat of the will and intelligence. He experimented, after Hitzig's method, on newly born rabbits and dogs, to ascertain whether the movements which are discharged by the impulse of the will from the gray matter are also present in the newly born. It was noticed that in removing the dura mater pain was produced, but no convulsions. It was shown that on the tenth day of extra-uterine life the "centre" for the anterior extremities was formed (all other centres were absent), and at this time occupied a greater area than at a later period. The same is true of the area for the posterior extremities, which appear about the thirteenth day. These provinces gradually become limited, and on the sixteenth day, they are well-defined (*e.g.* the centre for the anterior and posterior extremities and facialis). No doubt, individual peculiarities and those of race affect the development and localisation of the individual centres. Coinciding with the above, destruction of the cortical area within the first ten days produced no symptoms of paralysis or ataxia. Even when the animals survived, no observable disturbances occurred later—even in one dog, where the cortex was destroyed in both sides. At eight weeks this animal was small and plump, which was also observed on those animals operated on only one side.

In order to test whether the deeper parts of the brain of the newly born are excitable or not, unisolated needles were introduced and the corpora striata stimulated. From here it was impossible to produce contractions; but from the fibres of the capsula interna contractions of the opposite anterior extremities were produced. The point to be irritated varied with the individual and with age. Movement was most certain on stimulating the fibres passing between the corpus striatum and the optic thalamus, even at the time when no effect could be obtained from the cortex.

As the most probable cause of the absence of effect on stimulating the brain of the newly born, the author regards the fact that at so early a period the fibres are not all covered by the white substance of Schwann, so that the channels are not well isolated. How imperfect the cerebral functions are, may be shown by the following experiment. Both hemispheres, with corpora striata, of a newly born dog were extirpated, so that it retained the optic thalami and corpora quadrigemina, and all the movements previously exhibited by the animal took place as before. As a proof that after extirpation of one hemisphere the other may act for the removed one, the author gives the following experiment. From a dog four days old, the whole prefrontal lobe and part of

the postfrontal in the left side were removed. When after three months the *right* centre for the anterior extremity was exposed and stimulated, not only the *left* but also the right forefoot responded.

PITRES ON HEMI-ANÆSTHESIA OF CEREBRAL ORIGIN.—A. Pitres (*Progrès Médical*, No. 29), relates the case of a woman, aged 58, with left-sided hemiplegia, where the sensibility of the skin of the paralysed side was in almost all respects considerably lower than that of the right side. The same was true of taste on the left half of the tongue, and of smell in the left nostril. The left eye was turned inwards, and the movements of both eyes were limited towards the left. The right eye possessed only half the acuteness of vision, and the left was even more affected. The field of vision of both eyes was limited concentrically for white, and for other colours. There was neither atrophy nor neuritis of the optic nerve present. On section, the right thalamus opticus was found to contain an ochre-coloured nodule, of the size of an almond. The nucleus caudatus was destroyed to the extent of two centimetres, and the internal capsule was also affected. The most internal portion of the corpus lenticulare was of a slightly yellowish colour, but was otherwise intact. The other parts of the brain showed no lesion.

W. STIRLING, D.Sc., M.D.

WILSON ON ANOMALY OF THE PULMONARY VALVES.—At a meeting of the Pathological Society of Philadelphia in June (*Philadelphia Medical Times*, October 14), Dr. J. C. Wilson showed a heart taken from the body of a middle-aged woman, who was admitted dying into the Philadelphia Hospital.

There were four semilunar valves at the orifice of the pulmonary artery, three of which were nearly or about the normal size. The fourth resembled the others closely in contour and formation, save that it was narrower and less deep, and was, so to say, crowded in between two of its fellows.

The heart was hypertrophied, especially in the right side; the other valve-systems were normal. A point worthy of attention was the marked thinning of the pulmonary semilunar leaflets in the *lunula*, and in some of them the separation of the tendinous border of the valve, forming a slit-like opening or *fenestration*. This, viewed in connection with the right ventricular hypertrophy and the fact that the right lung was so compressed by a vast pleural effusion of long duration as to form a small shrivelled mass, and so afford great if not almost complete obstruction to its circulation, went far to support the theory that such valve-fenestrations were due to long-continued extensive arterial tension. This was the first instance in which Dr. Wilson had seen them in the pulmonary valves.

Dr. Pepper called attention to the fact that the appearances at the point of insertion of one of the small leaflets in the specimen showed conclusively that this seeping malformation was the result of disease. He also alluded to the comparative rarity of fenestrations in the valves of the right side of the heart, and to the fact that although these small perforations may occasionally be the result of malformation, they are far more frequently found associated with conditions that indicate that there has been increased strain upon the valves.

MALASSEZ ON EPITHELIOMA OF THE LUNG.—Malassez (*Archives de Physiologie*, Aug.), describes

a case of primary encephaloid cancer of the lung, in which the primitive lesion consisted of a distinctly epithelial new formation growing on the walls of the pulmonary alveoli, in such a manner that the respiratory cavities were transformed into mucous cysts. Some of the cells of the new growth had the appearance of normal adult cells, typical cylindrical epithelium; others were in various abnormal forms, which might be considered as cells which were in a condition of proliferation, or on their way to perfect development. The growth was distributed throughout the lung-tissue in masses which corresponded to lobules or groups of lobules, thus forming more or less isolated tumours of various sizes. The disease appeared to spread itself in two distinct ways, first, by the route of the deeper lymphatics and the bronchial glands; and, secondly, by means of the superficial lymphatics and the pleura. In different parts of the lung two varieties of tumours would be distinguished; one composed of cavities lined with typical epithelial cells, and little proliferation of connective tissue (epithelioma mucoides), the other consisting of spaces tightly filled with cells; more or less differing from normal adult epithelium. These latter, which were regarded as secondary deposits, presented all the characters of typical carcinoma.

STROGANOFF ON THE ORIGIN OF THE CELLULAR ELEMENTS IN ENDARTERITIS.—Stroganoff (*Archives de Physiologie*, Aug.), supports the view put forward by Traube, as to the origin of the cell-elements in the non-vascular tissue of the vessels; namely, that in the earlier stages of endarteritis the white blood-corpuscles pass from the cavity of the vessel itself into the internal coat, and that they do not come from proliferation of pre-existing cell-elements, or from the vessels supplying the external coat. From careful microscopic examination of the earlier stages of the disease in the human subject, he satisfies himself that, where there already existed distinct thickening of the internal coat of the aorta, there was no trace of development of vessels in it, nor was there any sign of proliferation, or fatty metamorphosis of its constituent element; but the subepithelioid layer was infiltrated with "young elements" like white blood-corpuscles, with which were associated a lesser number of red blood-corpuscles. No infiltration of cell-elements, nor calcareous deposit, was seen either in the deeper layer or in the middle or external coats of the vessel. From the fact of the red blood-corpuscles being with them, he believes that the white cell-elements obviously come from the blood; they cannot come from the vasa vasorum, which show no sign of extravasation, nor from the lymphatic channels of the outer coats, or they would have been found in different parts of tissues on their way to the subepithelioid layer. There being no vessels in the internal tunic, they must come from the cavity of the vessel itself. The dilatation of the aorta and slight increase of pressure associated with cardiac hypertrophy are sufficient to account for the escape of the blood-corpuscles through the delicate epithelioid lining.

SPILLMANN ON CYSTIC HÆMATOMA OF THE SPLEEN.—Dr. Paul Spillmann describes (*Archives de Physiologie*, Aug.), a case in which he found this form of tumour in the spleen; he can find no record of a similar tumour occurring in this organ. It was of the size of an infant's head, attached to the inside of the spleen near the hilus. The interior of the



cyst was made up of a number of communicating anfractuositities filled with a yellowish fluid containing cholesterine. The following facts, taken from the detailed account, are dwelt upon as satisfactory evidence of the true character of the growth. 1. The cavity was lined with a single layer of cells like those which form the epithelial lining of the vessels. 2. In the general wall many points of calcareous deposit existed. 3. The inner surface was divided into numerous and intricate spaces. 4. The fluid contained numerous blood corpuscles and crystals. 5. Neither inosite nor succinic acid, both which constantly occur in hydatids, was found in the fluid. The cholesterine is probably the residue of absorbed blood.

**CARMICHAEL ON TUMOUR OF THE CEREBELLUM WITHOUT SYMPTOMS DURING LIFE.**—At the meeting of the Edinburgh Medico-Chirurgical Society on Nov. 15, Dr. James Carmichael exhibited a tumour of the cerebellum, which he had obtained at the *post mortem* examination of a patient (aged 28) who had died suddenly. The growth, which was calcareous, was situated in the posterior fossa of the skull, and was attached to the dura mater on the left side, immediately beneath the tentorium cerebelli, in the angle between it and the descending part of the membrane. Anteriorly, the tumour was firmly bound to the membranes covering the left lobe of the cerebellum, in the posterior part of which it had produced by pressure a distinct hollow. The growth was irregular in shape, and somewhat nodular, about two inches in length, and varied in thickness at different points from a half to three-quarters of an inch; it was exceedingly hard and bony. The patient had previously been in apparent good health and exhibited no symptoms of cerebellar or other disease. He had gone to bed apparently in his usual health, and died comatose about four hours afterwards. It might, Dr. Carmichael thought, be considered probable that during sleep he had been seized with an epileptic convulsion, from which he never rallied, but became comatose. This was, so far, conjecture, but entirely accorded with the termination of cases of epilepsy dependent on organic lesions, recorded by many observers, as Cruveilhier, Louis, and Abercrombie.

**GANGHOFNER AND PRIBRAM ON THE URINE IN MELANOSIS.**—The black colour of the urine in cases of melanotic disease has been often noticed, but opinions are still much divided as to the nature and origin of the pigment excreted. Dr. F. Ganghofner and Professor Alfred Pribram (*Prager Vierteljahrsschrift*, vol. CXXX, and *Dublin Medical Journal*) observed a case in which the urine presented the following appearances. It was of a yellowish brown colour, deposited a sediment of lithates, contained neither albumen nor sugar. When treated with hydrochloric acid it became dark brown; this colour was unaffected by the further addition of a drop of solution of chloride of calcium, but several drops destroyed the colour. The urine, which when freshly passed had a yellow colour, on standing became darker, and finally as black as ink. If the urine which had not yet become dark were treated with a dilute solution of bichromate of potash to which some sulphuric acid had been added, there immediately formed in it a black cloudiness, and by degrees it became intensely black. Boiling with chlorate of potash, nitric acid, or other oxidising agents, also produced the blackening. If, to the filtered urine, distilled water were added until its colour was the same

as that of another specimen of urine which was rich in indican and of a wine-yellow colour, the colour of the two specimens was equal when hydrochloric acid was added. A drop of chloride of calcium produced no alteration; an excess destroyed the colour. The patient was a woman fifty-two years of age. The disease began by the degeneration of a pigmented mole on the leg, and lasted about a year. Numerous metastases occurred both in the superficial and the deep parts. The particulars of the case during life and the pathological appearances are very fully given. The authors discuss, at great length, the various opinions that have been put forward as to the origin of the pigment in the growths, its relation to that passed in the urine, and the chemical and physiological characters of the latter. The following are the conclusions at which they arrive. 1. The urine of patients suffering from melanotic carcinoma contains sometimes a chromogen, which, on the addition of oxidising agents, as well as on standing in contact with the air, becomes of an intensely black colour. 2. Even while the melanotic growths are extending, the chromogen may transitorily diminish to such a degree that it can no longer be detected by the ordinary reactions. 3. The relative quantity of the chromogen and, consequently, the intensity of the reaction, varies inversely with the quantity of urine passed in twenty-four hours—*i.e.*, with the quantity of urinary water. 4. But it varies directly with the specific gravity—*i.e.*, with the quantity of solid ingredients. 5. The abundance of chromogen is independent (*a*) of temperature-fever; (*b*) of impediments to respiration; (*c*) of the quantity and quality of the fæces passed, hence no relation to the function of the intestine is discoverable. 6. Besides the chromogen, the urine of the case in question contained a considerable percentage increase of indican. 7. The presence of the chromogen obscured the simple indigo reaction with hydrochloric acid and chloride of lime, but after the precipitation of the chromogen this became distinct. 8. It is uncertain whether the chromogen excreted with the urine in melanotic carcinoma is a special pigment or one of the usual urinary pigments in greatly increased quantity. The former view is, however, the more probable, for—9. From the urine in question a pigment could be obtained which differed markedly from the known black urinary colouring matters, in its great resistance to the ordinary solvents of the latter.

#### RECENT PAPERS.

Aneurisms of the Aorta and Mitral Insufficiency. By Dr. Durosiez (*Gazette Médicale de Paris*, January 6th, 1877.)  
On Some Changes in the Red Blood-Corpuscles. By Dr. M. Litten. (*Berliner Klinische Wochenschrift*, January 1st.)  
Diffusion of Cancer through the Veins. By Dr. Gatti. (*Annali Universali di Medicina e di Chirurgia*, November 1876.)

#### MEDICINE.

**PABIS ON ABSCESS OF THE LIVER MISTAKEN FOR EMPYEMA: THORACENTESIS.**—Dr. Pabis relates in the *Giornale di Medicina Militare* for September, the case of a soldier who was admitted to hospital with an abscess on the left trochanteric region. He had been healthy, but three years before admission had received a gunshot wound in the right hypochondriac region which confined him to bed for six weeks: at this point was an irregular cicatrix, adherent to the subjacent muscular tissue. The abscess having been opened, the resulting wound, in spite of

energetic local treatment, extended and assumed a fungous aspect, the edges became undermined, and sinuses were formed. Under local and constitutional treatment, the wound healed in about two-and-a-half months. After having remained some time in a favourable condition, the patient was attacked with fever preceded by rigors, troublesome dry cough, dyspnoea, and a stabbing pain in the right mammary region. Inflammation of the right pleura was diagnosed; leeches were applied, afterwards a blister, and repeated doses of quinine were given. The patient, however, grew worse, and, at the end of a month, presented the following symptoms. He had severe dyspnoea. The pectoral fremitus was completely abolished. There was complete dullness of the right chest anteriorly and laterally as high as the third rib, and from this part to the subclavicular fossa there was tympanic resonance. The right side of the chest was distended, the greater convexity being at the lower and lateral part: the intercostal spaces were dilated and prominent. Posteriorly and above, resonance was more extensive, and bronchial breath-sound was heard in the supraspinous and infraspinous regions. The heart was displaced to the left and upwards.

Thoracotomy was performed, an incision being made along the posterior axillary line in the right intercostal space, where fluctuation was perceived. About two kilogrammes (more than four pints) of very fetid ichorous pus, mixed with detritus of tissue, escaped. No relief, however, was obtained; the disturbance of respiration remained, and the fever continued intense. Death took place five days after the operation. At the necropsy, the left side of the chest as high as the third rib was found to be occupied by the liver, which pushed the diaphragm upwards and against the wall of the chest. The right lung was collapsed, displaced upwards and inwards, and at its base was adherent to the diaphragm. The liver, which was enormously enlarged, had on its convex surface a vast abscess, containing pus of the worst quality: the liver-tissue beneath had undergone fatty degeneration, and contained two other abscesses. The diaphragm presented, at the point corresponding to the incision in the chest-wall, the puncture made by the bistoury.

A. HENRY, M.D.

**DAREMBERG ON THE EXPECTORATION IN PULMONARY PHTHISIS.**—In a thesis recently published, abstracted in the *Journal de Médecine et de Chirurgie Pratiques*, Dec. 1876, M. Daremberg has endeavoured to show that, if formerly too much was sought from an examination of the sputum, at the present time too little is sought. The results which the author has obtained, particularly from a chemical and microscopical point of view, are very interesting.

Chemically, for example, there is a great difference between the sputum of chronic bronchitis and that of phthisis; the first is characterised by the small proportion of solid matters, and above all, by the absence of albumen and fat: the second, on the contrary, by the abundance of these organic matters. Besides these, which are found in large quantities, we also meet with chlorides of sodium, soda and phosphates, these last being also eliminated abundantly by the urine in phthisical patients, as has long been observed, and is proved by the recent researches of M. Teissier of Lyons. The difference thus proved between a patient suffering from chronic bronchitis, and another suffering from phthisis, shows that while the former loses by expectoration about 2 per

cent. of the nitrogenous substances necessary to his existence, the latter loses nearly three times as much. In phthisical patients, the sputum may contain almost as much phosphates and chlorides as the urine; and the expectoration is thus one of the channels by which the products of denutrition are expelled; but it is also one of the causes of that denutrition.

From a histological point of view, one of the most important results is certainly the presence of elastic fibres recognised by the microscope in the sputum. The presence of these fibres is a valuable sign, for they are found only in phthisis, pulmonary gangrene, or hæmorrhagic infarction: the last two affections being easily eliminated by their particular signs, the presence of these fibres will then be indicative of pulmonary phthisis. Besides, we must know from this, that, if in any individual case we find these fibres at a given time, and then we cease to find them, this fact will show that the malady has been arrested; if they reappear later, we may affirm that a new portion of lung has become the seat of ulceration. It results from this, that the absence of these fibres does not indicate the absence of cavities, but merely the absence of the ulcerative process at the time.

It is of great importance to diminish expectoration in phthisical patients, as it is to them a double cause of exhaustion, by the abundance of organic and mineral substances which are expelled, and by the fatigue it causes. Amongst the medicines recommended for this purpose, opium, and above all, morphia by subcutaneous injection, are the most sure. The preparations of eucalyptus also give good results, and greatly diminish expectoration, when administered in the form of capsules, one or two daily, each containing 20 centigrammes of essence of eucalyptus.

Lastly, M. Daremberg reports many observations due to M. Bouchard, according to which the creasote obtained from the tar of the beech perfectly fulfils this object. It has been given in doses varying from 10 to 30 centigrammes, and its use has been always followed by success, sometimes completely, after a longer or shorter time. It may be easily distinguished from the creasote of coal-tar, by the use of collodion: 15 parts of the coal-tar creasote, and 10 parts of collodion, give a gelatinous mass, whilst the creasote from the beech-tar mixes with the collodion, and gives a clear solution.

**TORDEUS ON THE TREATMENT OF SPASM OF THE GLOTTIS.**—In the *Journal de Médecine et de Chirurgie Pratiques*, Dec. 1876, is an article, abstracted from the *Journal de Médecine Belge*. M. Tordeus remarks that spasm of the glottis is sometimes developed from hereditary influence, and often recurs in the same individual: on the other hand some occasional causes which may give rise to it are of an avoidable nature. Thus, in certain cases the cause is an irritation of the skin, the prick of a pin, the action of cold, worms in the intestine, teething, anger, or violent emotion, etc. We see then breaking out, with an attack more serious than that of stridulous laryngitis, or false croup, spasm of the glottis, accompanied by contraction of the muscles of respiration, and principally of the diaphragm; sometimes even general convulsions supervene. When we fear an attack, we must treat the verminous affection, lance the gums in teething infants, avoid all irritation of the skin, and as rickety and anæmic children are frequently attacked,



must give them remedies suited to improve their general health.

Lastly, antispasmodics, and principally bromide of potassium (seven-and-a-half grains to fifteen grains a day), are indicated under these circumstances. During the paroxysms, we should remove at once any clothing which may impede respiration, and expose the little patient to the air, at the same time dashing cold water on him. If the paroxysm be prolonged, we must use friction, and sinapisms to the limbs. Bouchut advises chloroform, which often gives remarkable results. In the cases where respiration is long in returning, we must employ artificial respiration and electricity to the chest. Unfortunately, we can scarcely ever have time to apply all these means; and the proceeding proposed by M. Charon, and first extolled by M. Henriette, appears much more practical. According to that physician, inhalations of ammonia seemed almost always successful in combating the attack. He therefore advises mothers, whose children are subject to spasm of the glottis, always to carry a bottle of ammonia about with them. M. Charon cites the case of a physician's wife who followed this advice, and whose child was always rapidly brought round from attacks of spasm by this means: but one day she had not the bottle with her, and a fatal asphyxia occurred while the mother was searching for it.

W. DOUGLAS HEMMING.

**ROSENBACH ON ATHETOSIS.**—Dr. Ottomar Rosenbach (*Virchow's Archiv*, Oct. 1876), says that we have no right to look upon athetosis as an independent affection, but as one connected with different diseased processes, which by their locality produce various phenomena of destruction of motility. He gives the notes of a case of locomotor ataxy, in which there was well-marked athetosis of the fingers and toes, the necropsy revealing only the characteristic lesion of the posterior columns.

ROBERT SAUNDBY, M.B.

**BERNHARDT ON ATHETOSIS.**—In the *Deutsche Medicinische Wochenschrift* of Dec. 2nd, Dr. Bernhardt of Berlin describes a case of athetosis, and makes some observations on the subject, supplementary to a paper by him in *Virchow's Archiv*. (Bd. 67, Heft. 1), O. R., male, aged 14, was the son of healthy parents; of his six brothers and sisters, three died in infancy, without having suffered from convulsions, and the other three, aged 17, 16, and 8, are healthy: his present condition was stated to have developed itself after a fit, which he had one night when 15 months old. The lad is strongly built, has a stupid expression, prominent lips, and open mouth, low forehead, short head, broader behind than in front, the parietal eminences projecting pointedly. He has little intelligence, cannot read, but can form a few letters with the left hand, and has no idea of reckoning. He speaks without jerking his words, the tongue is protruded straight, and during rest the two sides of the face are equal, but as soon as the muscles begin to act, the mouth is drawn to the left; the orbicularis palpebrarum of the left side also acts more strongly and independently than the right. Sensation in the face and extremities is somewhat impaired on the right side. As the patient sits quiet, now and again a muscular twitch may be observed to pass along the right upper limb, but when this is extended the forearm becomes pronated, the hand flexed, and turned towards the ulnar side, while the digits are spread out, and involuntarily moved in all directions, especially the

thumb and little finger. The hand can, however, remain still for a time if rested, say, on the table; the voluntary movements of this extremity are slower, weaker, and less skilful than those of the left. In walking, the right leg drags somewhat; the left thigh is rather larger than the right, but the reverse is the case as regards the leg. When the right foot is rested up it falls into the position of equino-varus, and the toes are constantly being flexed and extended. The patient is subject to occasional fits, which occur only at night; his thoracic organs are healthy. The author points out that the above case differs from any previously recorded, in the toes being affected to a greater extent than the fingers, and notes the consequent increase in size of the muscles of the leg on the affected side. He considers athetosis, as exemplified above, and in other cases previously described by him, to be undoubtedly due to a lesion of the brain on the side opposite to that affected, and probably occurring in the white medullary matter in the neighbourhood of the optic thalamus.

Rosenbach, in a recent paper in *Virchow's Archiv*, says that the group of symptoms, known as athetosis, cannot be considered as an independent disease, but accompanies very various morbid processes. In the case, related by him, of a woman suffering from tabes dorsalis, and who, during the last two years of her life, exhibited constant movements of the fingers and toes, grey degeneration of the posterior columns of the cord was found at the autopsy.

Bernhardt has also noticed in tabic patients, purposeless and involuntary movements of the fingers, but does not consider these cases to be examples of athetosis, as originally described by Dr. Hammond of New York, and to the existence of which an affection of the brain, and of one side of the body, are considered to be necessary. It is, nevertheless, admitted that the existence of athetosis, as an independent disease, is still a matter for discussion.

[Dr. Bernhardt's case has some points of resemblance with a series of cases described by Dr. T. Claye Shaw in vol. ix of *St. Bartholomew's Hospital Reports*, under the name of "Athetosis, or Imbecility, with Ataxia"; the resemblance lies in the fact that the affection dates from infancy, the patient exhibits very feeble mental development, and the facial muscles are also involved. On the other hand, Dr. Shaw's patients were not epileptic, the affection was not confined to one side of the body, and the muscles of the neck were also affected; altogether, they form a clearly defined group by themselves.—*Rep.*]

CHAS. S. W. COBBOLD, M.D.

**WARFWINGE ON THE TYPHUS EPIDEMIC OF 1875 AT STOCKHOLM.**—The *Hygieia* for July 1876 (abstract in *Dublin Medical Journal*), contains an interesting article from the pen of Dr. W. F. Warfwinge on this epidemic. It is based on the Annual Report of the Provincial Hospital, Hornsgatan, Stockholm, for 1875. During that year, 667 new cases of typhus were treated in the hospital. The epidemic commenced in December 1874, in which month 122 patients were treated. The number rose to 254 in March 1875, after which the monthly admissions declined rapidly to but 9 in September. Of the 667 patients, 449 were males and 218 were females; and 444, or two-thirds of all those treated, were aged between 15 and 40 years. The eminently contagious nature of the disease was abundantly illus-

trated, as it not unfrequently happened that an entire family was admitted in typhus, and large numbers were sent in from various public institutions for the relief of the poor.

No opportunity was afforded during the year of noting the temperature of the body on the *first* day of the disease. Observations on the *second* day were made in only 5 cases, of which 2 showed an evening temperature under  $102^{\circ}2'$ ; 2 between  $103^{\circ}1'$  and  $104^{\circ}0'$ , and 1 of  $104^{\circ}5'$ . Convalescence set in on the ninth day in one case (out of 667); on the tenth day in 4 cases; on the fifteenth day in 94 cases; and so late as the twenty-first day in 4 cases. As regards mortality, 130 patients, or 19.5 per cent., died. The death-rate among males was 21.83 per cent., and among females only 14.68. 6 patients out of 8 with vibices succumbed; and so did 6 out of 10 with bed-sores; 3 out of 16 with erysipelas; 7 out of 18 with parotitis; 3 out of 11 with abscesses; and 1 with spontaneous gangrene. Of 48 patients under 15 years of age none died. The death-rate rose from 2.3 per cent. between 16 and 20 years, to 66.7 per cent. above 65 years. The mean duration of illness in 87 fatal cases, accurately ascertained, was 14.47 days. On two occasions death occurred on the *eighth* day. No case proved fatal during the first week.

*Post mortem* examinations were made in 112 of the 130 fatal cases. The results were as follow. 1. *The Brain*.—Hyperæmia, 53 cases; slight œdema, 39; considerable œdema, 39. 2. *The Lungs*.—Hypostatic congestion, 67 cases; pneumonia, 10; pleuritis, 5. 3. *The Heart*.—Dark fluid blood in the cavities, with few or no loose coagula, 90 cases; fibrinous clots in the cavities, 22; the muscular structure softened, more or less friable, and discoloured, 52. 4. *The Spleen*.—Of normal size or diminished, 24 cases; inconsiderably enlarged, 35; about half as large again as normal, 31; doubled in size, 22; of normal consistence, 13; of slightly lessened consistence, 39; soft, 47; of pulpy consistence, 13. 5. *The Kidneys*.—The cut surface very tumid and discoloured, 35 cases; cut surface slightly tumid and discoloured, 62; hyperæmic, 5; healthy, 10 cases.

STEWART ON CROUP AND DIPHThERIA.—In a paper on the differential diagnosis of croup and diphtheria, published in the *Philadelphia Medical Times*, October 14, Dr. W. S. Stewart gives the following summary of the differences between croup and diphtheria.—Croup is ushered in by a cough; diphtheria by a chill. Croup is most frequent when there is greater humidity in the atmosphere and the east wind is prevailing; diphtheria does not depend upon meteorological changes. Croup is not contagious; diphtheria most decidedly is. Croup comes on suddenly; diphtheria may be tardy. Croup is recognised by the croaking sound; diphtheria is known by the patches of membrane on the throat. Croup must be promptly relieved; diphtheria is tardy in its resolution. Croup does not affect the system; diphtheria is very prostrating. Croup occurs most frequently in childhood and from two to five years; diphtheria occurs at all ages. Croup is apt to occur very often in the same person; diphtheria may occur more than once in the same case, but the patient is not so liable to a second attack. The urine is not affected in croup, but in diphtheria it becomes albuminous. In the blood there may be an increase of fibrine in croup; in diphtheria there is a morbid condition of the blood produced only by a poison in the system. There are no offensive exhalations from croup, while they are very manifest in diphtheria. It is seldom that both diseases

occur in one person at the same time. In speaking of treatment he says: In croup we must adopt prompt measures in the beginning of the disease; in diphtheria it is not always evident in the first symptoms what the disease will be. In croup emetics are indicated; in diphtheria emetics are too prostrating. In croup counter-irritants are very essential; in diphtheria counter-irritants are of no avail. In croup no topical applications are made to the membrane; in diphtheria mopping off the membrane is a necessity. In croup expectorants are required; in diphtheria they are not needed. In croup depressants are given; in diphtheria stimulants are required.

#### RECENT PAPERS.

- The Symptoms and Treatment of Medullary Leukæmia. By Dr. F. Mosler. (*Berliner Klinische Wochenschrift*, December 4, 11, 18, 25.)  
 Cases of Leukæmia. By Dr. Chvostek. (*Allgemeine Wiener Medizin. Zeitung*, January 2.)  
 A Case of So-called Pseudo-leukæmia (Malignant Lymphoma) with Unusual Frequency of Pulse. By Dr. Feschmacher. (*Deutsche Medizin. Wochenschrift*, December 23 and 30.)  
 A Remarkable Case of Ulcer of the Stomach. By Dr. Mancini. (*Lo Sperimentale*, December.)  
 A Case of Rheumatic Tetanus treated by Hydrate of Chloral. By Dr. Lorenzutti. (*Annali Universali di Medicina e di Chirurgia*, November 1876.)  
 Etiology and Prophylaxy of Typhoid Fever. By Dr. Henri Huchard. (*L'Union Médicale*, January 4, 1876.)  
 On Climates adapted for Phthisical Patients. By Dr. E. Ory. (*La France Médicale*, December 20.)  
 On Cerebral Localisations. By Dr. F. de Ranse. (*Gazette Médicale de Paris*, January 6, 1877.)  
 On the Frequency of Diaphragmatic Pleurisy consecutive on generalised Acute Peritonitis. By Dr. Laroynne. (*Lyon Médicale*, January 7, 1877.)  
 On the Treatment of Typhoid Fever by Cold Baths. By Dr. Féréol. (*L'Union Médicale*, December 16.)  
 On the Use of Salicylic Acid in Rheumatism. By Dr. Sée. (*Le Progrès Médical*, December 16.)  
 A Case of Traumatic Tetanus treated with Hydrate of Chloral and Jaborandi. By Dr. Giovanni Ferrini of Tunis. (*Gazette Médicale de Paris*, December 16.)  
 On the Treatment of Typhoid Fever by Cold Baths in reference to the existing Epidemic in Paris. By Dr. Maurice Raynaud. (*Bulletin Général de Thérapeutique*, December 15.)  
 Cases of Albuminuria in Typhoid Fever. By MM. Legroux and V. Hanot. (*Archives Générales de Médecine*, December 1876.)

#### DISEASES OF CHILDREN.

HÜTTENBRENNER ON TWO ATTACKS OF SCARLATINA IN THE SAME PATIENT.—An unequivocal instance of scarlatina affecting the same person twice is described in the last number of the *Jahrbuch für Kinderheilkunde* (Band x, Heft 3, 4). The younger of two brothers, aged respectively three-and-a-half and seven years, had a well-marked attack of scarlatina, followed by lamellar desquamation. He recovered completely at the end of four weeks. The rooms were disinfected, and a fortnight later the brother, who had been sent away, returned home. He remained well for six weeks, and then also took the disease. As the younger brother had recovered from it only two months before, but slight precautions were taken with him. The previous attack, however, did not confer immunity upon him; for, twelve days afterwards, he again became feverish, vomited, and complained of difficulty in swallowing. The mucous membrane of the throat was of a diffused red. On the next day a scarlatina rash appeared in greater intensity than on the first attack. The course was favourable and uncomplicated, and, fourteen days later, extensive lamellar desquamation took place. There are some grounds for believing in a family predisposition in this case; for the mother suffered during each attack of the younger boy with violent angina (diphtheritic in patches), high



fever, and transient and early albuminuria and hæmaturia; followed the first time by branny desquamation, and terminating the second time in acute articular rheumatism.

**MAGNAN ON AN EPIDEMIC OF SPURIOUS TETANUS.**—A paper describing an epidemic of this disease, for which the above is perhaps the nearest English equivalent, but which is more generally known by the French term *tétanie*, was read before the Société de Biologie on Nov. 22 (*Gazette Médicale de Paris*). The epidemic occurred at Gentilly, near Paris, in a girl's school numbering 115 pupils. The first patient, a girl aged ten years, was attacked on July 15. She is described as well-developed and of habitually good health. The contraction, which was preceded by numbness, formication and prickings of the fingers, affected the right upper extremity. The fingers were stiff and semi-flexed; the thumb forcibly pressed against the index finger; the fore-arm fixed, and the muscles on its anterior surface slightly prominent. The patient complained of pain in the wrist, elbow, and, sometimes, in the shoulder. Considerable force was required to open the hand, and it closed immediately the force was removed. The contractions, however, were not continuous; they showed themselves at varying intervals during four days, each attack lasting from half-an-hour to an hour. During the intervals the limb was normal, with the exception of a feeling of discomfort and numbness. By the end of July the symptoms had disappeared. During August, a few attacks of short duration showed themselves in the right hand. In September no attack occurred. From October 15th to November 10th the right arm was again affected; the pain was greater and the attacks more prolonged and severe than before—some lasting all day. On November 11th the contraction of the arm had diminished; but the right leg was attacked, the foot being extended and slightly adducted. The symptoms continued five days, and then gradually subsided. By November 21st, she was practically well. Two other pupils were attacked in October, and two more in the beginning of November. Numerous cases then followed rapidly upon one other, so that by November 14th nineteen girls were the subject of the malady—the last eight apparently having been attacked in one day. The course of the affection in all was similar to that in the case described; but sometimes the arm alone, or one leg alone, was affected; or both legs. One case began with loss of consciousness and convulsive movements of the eyes, while in another illusions were present at the height of the disorder. The appearance of the affection produced a sort of panic in the school, and its spread was attributed to fear and involuntary imitation. The school was closed on November 15th, and after that the patients rapidly improved, and no fresh case occurred. No one in the village was attacked, and no instance of it occurred in a neighbouring boys' school of 150 pupils. One girl was under the care of M. Jules Simon at the Children's Hospital, and improved rapidly. She was treated with galvanism and stimulating frictions. No record is given of the treatment of the other cases.

**JACOBI ON MASTURBATION AND HYSTERIA IN YOUNG CHILDREN.**—In the pamphlet (Wood, New York) of which this is the subject, Dr. Jacobi represents masturbation, at an early age, as being much more frequent than is usually believed. There is not necessarily or commonly any sign of external

irritation in the genitals. The following is the first case given; but numerous others are recorded. A well-built girl aged three years, pale, but with a rather bloated face, had been treated for what were considered slight convulsive attacks. They came on at irregular intervals and always when sitting down; never when asleep or when walking about or playing. "She was very apt to keep her thighs closely joined, or to cross her legs. She moved and rubbed her limbs violently, got purple in the face, began to perspire, to twitch her eyes, which often looked excited, and lean back exhausted, sighing or breathing hurriedly." The temperature was normal. There was no albuminuria. The temper, as constantly happens in these cases, had become peevish for some time past. There was no history of previous convulsions, or, in her family, of epilepsy. Vermifuges and sedatives had been given without effect. For the treatment of these cases there are three indications:—1. Remove the cause—*e. g.*, worms, constipation, vesical catarrh, phimosis, etc.; 2. Keep the parts cool by not allowing the child to sit down for long together, and making him get up as soon as he wakes; 3. Break the habit by attracting his attention and separating the thighs when an attack is imminent. The sedatives recommended are the bromides, and lupulin, and camphor. Regular bathing is also enjoined; but the cold bath must not be given at night. The part on hysteria includes the different neuralgias, hysterical cough, hysterical aphonia, and various forms of paralysis. One girl of nine years, who had ptosis as a sequela of general convulsions, was instantly cured by being commanded to open the eye; her faith having previously been excited in a manœuvre which consisted merely in pressing upon the supraorbital nerve. The writer also touches upon the subject of hysteria in the male adult, and discusses other questions of interest. RALPH W. LEFTWICH, M.D.

**BOUCHUT ON MENSTRUATION IN A CHILD TWENTY-TWO MONTHS OLD.**—In his clinic at the Hospital for Children M. Bouchut recently cited the following case (*Paris Médical*, Dec. 22, 1876). The case had been recorded and sent from Nouméa by Dr. Lostalot, under whose care it came. Nelly O—, born in London, on January 27, 1872, fourth daughter of a family of six children, presents all the signs of puberty as precocious as it is incontestable. She is strong and well developed. What first strikes one is the finish, so to speak, of the outlines of her figure, the development of the shoulders and of the hips, as well as the plump roundness of the limbs. She weighs fifty-four English pounds, and enjoys perfect health. Her parents say that when she came into the world they were struck by the development of her breasts, which were of the size of a small apple; otherwise she presented nothing remarkable until the age of twenty-two months, when her menses appeared for the first time. Since then they have reappeared exactly every four weeks. The flow is very regular, and lasts from four to six days, and is equal in amount to that of an adult. Its appearance is preceded by habitual *malaise*, and the child so promptly recognises it that when she feels it she warns her parents that "the abscess is going to burst." When we examined her in April 1876, her breasts were large, completely formed, and contrasted strangely with the slight development of the chest; of the size of a man's fist strongly clenched, they were somewhat pyriform, with a rosy areola, slightly swollen, and forming a central cup in which was the nipple. A marked increase in size of the breasts coincides

with the appearance of the menses. I would add that the pubes is covered with well-developed down, and that the external organs of generation present a development analogous to that of the breasts. The character of the child is more serious than that of other children of her own age; she does not appear to seek the society of little boys more than that of little girls, and rarely mixes in their games; but when the occasion presents itself, she is particularly addicted to playing the part of a little mother. She is, in fact, a woman in miniature.

Remarking on the case, M. Bouchut says, we may ask whether in this little girl there was every month the passage of an ovum? Since the researches of Bischoff, Meekel, Brierre de Boismont, Pouchet, Raciborski, etc., it is admitted in science that menstruation is only the result of ovulation, accompanied by uterine congestion and hæmorrhage. Is this true? We may doubt it:—1. Because, in many cases in women who have died during, or a few days after, the period, Corti and Bischoff themselves have not found recent traces of a Graafian vesicle; 2. Because ovulation and conception may take place without menstruation; 3. Because, in twenty-seven cases of double ovariectomy, Goodman cites three in which the menstrual function was not interrupted. J. Williams and Aveling of London, who are the promoters of the contradiction to the generally received opinion, have no doubt; on the contrary, they affirm that the menses result from the renewing and discharge of the uterine mucous membrane prepared in the inter-hæmorrhagic month. There is, according to Dr. Williams, a *disintegration of the uterine mucous membrane accompanied by hæmorrhage*, and Aveling calls this process *uterine nidation*. He considers it as indispensable to impregnation; but not to menstruation.

In the preceding case we do not see any good reasons for refusing to admit the monthly passage of an ovum. Since the breasts are precociously developed, we may suppose the same precocity in the uterus. Having made this reflection, we hasten to say that we may be permitted to doubt the relation between ovulation and menstruation. We know perfectly well that a woman may become pregnant without having ever menstruated. Lastly, M. Sinéty communicated to the *Société de Biologie* (Nov. 1870) a case with necropsy, tending to make one suppose that menstruation is independent of ovulation.

W. DOUGLAS HEMMING.

**FLEISCHMANN ON CHRONIC PNEUMONIA OF THE APEX IN CHILDREN.**—The difficulty in recognising this disease is well known. Dr. L. Fleischmann (*Wiener Medicin. Presse*, Dec. 20, 1876) gives the following symptoms observed in teething children.

1. Unilateral swelling of the lymphatic glands of the throat, of the back of the neck, or of the sub-maxillary region, when other local causes, such as pharyngitis, parotitis, alveolar inflammation, and diphtheria, can be excluded, causes strong suspicion that there is pneumonia of the apex of the same side. The glandular swelling continues while the process in the lung is active, and ceases when the lung infiltrations become stationary, the glands swelling and subsiding again with each advance of the inflammation.

2. Certain obstinate forms of conjunctivitis which, in spite of all treatment and without apparent cause, return from time to time with great severity, if but one and always the same eye be attacked, point with great probability to disease of the lung of the same side.

3. Eczema of one half of the face or head, which heals with difficulty and frequently occurs, sometimes alternating with or accompanied by ophthalmia of the same side, should lead to examination of the lungs, where pneumonia of the apex of the same side is often present.

4. Certain sympathetic disturbances of the one side of the face or head, having frequent changes in colour, from flushing to pallor; transitory circumscribed erythema of the cheek or temple, always on the same side with the pneumonia (the easy production of Trousseau's maculæ, which also accompany meningitis, cerebral tumours and other diseases being excluded, often indicate pneumonia of the apex of the same side.

5. Intermittent sympathetic neurosis affecting one side of the head, characterised by redness and elevation of the temperature of the skin of the affected side, is often observed in children with lung-infiltration of the same side.

6. Finally neuralgia of the trigeminus, oculo-motor, and vagus nerves occurred and disappeared during the process in the lung of the same side in such a manner, that no certain relation between the two could be determined. These symptoms were observed in so many cases, that the author regards them as reliable.

#### RECENT PAPER.

The Nature and Treatment of Tetanus or Contraction of the Extremities in Children. By M. Bouchut. (*Gazette des Hôpitaux*, December 12.)

#### SURGERY.

**LAVERAN ON ACUTE TUBERCULOSIS OF SYNOVIAL MEMBRANES.**—M. Laveran (*Progrès Médical*) describes an interesting case of this affection, of which the following is an abstract. A hitherto healthy man was attacked by articular pains, localised principally in the knees, and accompanied, in the right joint, by effusion; at the same time there was moderate fever; subacute articular rheumatism was diagnosed. Eight days after the commencement of the pains, marked dyspnoea supervened; the fever became violent, and the patient died fifteen days after entering the hospital, presenting all the symptoms of asphyxia from acute tuberculosis. At the necropsy, tubercular granulations were found in great numbers in the lungs, pleuræ, peritoneum, liver, spleen, kidneys, etc.; and above all, it appeared that the joint-affections which had been the primary manifestations of disease were due to the presence of perfectly characteristic tubercular granulations in the thickness of the synovial membranes. Microscopical examinations left no doubt as to the identity of the synovial granulations with those found in other organs. In this case the tubercular granulations were better defined, and more easily recognisable, than in chronic tubercular arthritis, because there were no fungosities, nor inflammatory matter surrounding the granulations and obscuring them. He says it is not astonishing that tubercle, which frequently affects the visceral serous membranes, should attack the serous coverings of the joints; he thinks that, if more joints were examined in subjects dying from acute tuberculosis, the affection would be more generally discovered; he considers it an explanation in many cases of vague pains in the limbs and joints complained of by many patients.



As such cases are liable to be confounded with acute rheumatism it is necessary to distrust for the future those articular rheumatisms which are accompanied by pleurisy, meningitis, peritonitis, etc., and in which, death having occurred, no *post mortem* examination has been made. The existence of rather large tubercles in the interior of the pons Varolii and medulla, gave rise to the suspicion that these lesions were older than the others; but microscopic examination demonstrated that they were constituted of small granulations compressed one against the other. There was no trace of old tubercular lesions at the apices of the lungs; but the remains of a pleurisy which had occurred in childhood, had left solid adhesions of the pleural surfaces with thickening of the membranes. The tubercles in the pons and medulla gave rise to no symptoms during life, probably because they separated without destroying the white fibres; no tubercles were discovered in the floor of the fourth ventricle, or near the nuclei of origin of the bulbar nerves. The dyspnoea which occurred is sufficiently accounted for by the tuberculosis of the lungs without the introduction of a hypothetical compression of the pneumogastric nuclei by the new formation. ROBERT SAUNDBY, M.B.

TYSON ON A LARGE CALCULUS PASSED PER URETHRAM.—At a meeting of the Pathological Society of Philadelphia on June 22 (*Philadelphia Medical Times*, October 14), Dr. Tyson showed a calculus which had been voided *per urethram*. The patient, a gentleman aged about 38, began early in 1869 to suffer from attacks of nephritic colic, which were followed after a time by symptoms of irritability of the bladder. About the beginning of March 1875, the patient fell into a febrile state, characterised by a frequent pulse, warm and dry skin, with dryish tongue, and a feeling of great weakness. These symptoms, when not controlled by remedies, were almost constant for about two months, and resulted in an appreciable loss of flesh. About the 1st of May they abated, and his general health began to be restored. For two or three days previously to May 15, there was the most intense irritation of the bladder. The desire to pass urine was constant, while the obstruction was complete, necessitating the use of the catheter, with which the patient always relieved himself. About 1 P.M. of the 15th, he sent for Dr. Tyson, stating that he believed he was passing a calculus, that it was apparently lodged in the perinæum. Three hours later, the calculus had passed, followed by a hæmaturia which gradually diminished. On May 21, the urine, six hours after passing, was phosphatic (as it had been for a considerable time), contained a few blood-corpuscles, and was albuminous, containing one-fourth its bulk of albumen.

The calculus, before it was bisected, was nearly an inch long and half an inch wide, and phosphatic in composition. Since it was passed, the gentleman has enjoyed excellent health, and on June 20th, 1876, was no longer annoyed by frequent desire to micturate. In a sleep of eight hours he had to get up once. A specimen of his urine was faintly alkaline, and contained a sedimental pus, with a small quantity of albumen.

Dr. Tyson believes that the direct cause of the passage of the calculus was the constant catheterisation for the purpose of washing out the bladder. Soft catheters were used, and of the largest size, so that finally the patient remarked that he had so dilated his urethra that he could scarcely retain his urine.

BELL ON REMOVAL OF LOOSE CARTILAGE FROM AN INFLAMED KNEE.—At the meeting of the Edinburgh Medico-Chirurgical Society, on November 15, Mr. Joseph Bell showed an interesting specimen of loose cartilage, removed by him from the knee-joint. The patient was a young gentleman, who suffered from severe attacks of acute synovitis in his knee. Mr. Bell suspected a loose cartilage as the cause, but on two occasions was unable to detect any evidence of its existence; nor were there any of the ordinary subjective symptoms. He was able, however, to feel it on one occasion, and removed it by direct incision, under due antiseptic precautions, taking care to fix the loose body before the chloroform had been fully administered. The knee-joint was inflamed, and contained serum, but no pus. A drainage-tube was inserted for the first three days. The incision was healed, and the patient quite well, in less than a fortnight. The motion in the joint was perfect; and, during the whole progress of the case, no rise of temperature, nor any disagreeable symptom, was experienced, although, previous to the operation, the temperature was 101 deg. The interesting point in the case was the performance of the operation on a joint inflamed, and on the point of suppuration. The loose body was somewhat peculiar in shape, and composed partly of cartilage and partly of bone.

RICHARDSON ON PIGMENTARY DEPOSIT IN MAMMARY CICATRIX.—At a meeting of the Obstetrical Society of Boston (*Boston Medical and Surgical Journal*, December 16), Dr. Richardson alluded to the fact that, owing to the crowding together of the mammary ducts at the nipple, it is always deemed advisable to make the incision, in cases of mammary abscess, as far from the centre of the breast as possible, in order that the ducts may receive no unnecessary injury. The following case seemed to show another reason for the exercise of care in selecting the spot for the incision, and to indicate the necessity for avoiding the making of any cut across the border-line of the areola, lest, besides a needless wounding of the mammary ducts, an unsightly and irregular discoloration of the breast be produced.

K. S., twenty-five years of age, was confined with her second child in the Boston Lying-in Hospital, February 17, 1876. According to the patient's story she had been confined with her first child in New York, March 24, 1874. Some time after her delivery in that city she "took cold", and had a large mammary abscess in the right breast. A small incision was made at the upper part of the areola, but, the opening not being deemed sufficient, a second cut was made two days later, at the lower edge of the areola. The first incision lay almost entirely within the areola, while the second, starting from a point about half an inch within, ran to a corresponding distance without the line of the circumference. An examination of the breast showed a very curious deposit of pigment, as affected by the location of the incision. At the upper part, where the cut scarcely passed beyond the line, a slight waving only in the regularity of the line was produced; but below, a deposit of pigment had taken place, which entirely surrounded the cicatrix of the lower incision, thus forming a prolongation of the areola at that point, measuring over half an inch in length, and nearly that distance in breadth. The result was a very marked disfigurement of the breast, which it would seem advisable to avoid in operations of this

kind. In case an abscess pointed along the line of the areola, a subcutaneous opening, made from a point below, which, while it gave a free exit to the pus, would avoid wounding the line of pigmentary deposit, would promise better results.

**MASON ON LIGATURE OF BOTH FEMORAL ARTERIES.**—Dr. Erskine Mason reports (*Archives of Clinical Surgery*, September) the case of a man, named John McGuire, aged 23, who was admitted into hospital in September, 1870, with aneurism of the right popliteal artery. Digital compression, and subsequently flexion, were employed, and the pulsation and bruit almost disappeared; but the symptoms returned, and the femoral artery was tied by Dr. Gurdon Buck on October 18th. The patient made a good recovery. On June 12, 1872, he was again admitted to hospital with an aneurism of the left femoral artery in the lower third. Ten days later the vessel was tied in the middle third, and he was discharged cured on August 6. In the right popliteal space, at the time of his admission, was a hard mass, the remains of the first aneurism.

**MONILLARD ON THE TREATMENT OF ERECTILE TUMOURS BY INJECTIONS OF CHLORAL.**—Dr. Monillard, in his *Thèse de Paris*, 1876, does not pretend to demonstrate that chloral in the form of injection is superior to other modes of treatment. He contents himself with reporting three cases in which injections have given favourable results. Ten drops of solution in equal parts produce a slight hard inflammatory tumefaction, situated round a small scarified spot. In another case, M. Marc Sée saw some serious accidents supervene from chloralisation. This, however, was in consequence of the multiplicity of the punctures made simultaneously. The way to avoid these accidents would be only to make the punctures at intervals of several days.

**FORWOOD ON A PUNCTURED WOUND OF THE RECTUM.**—Dr. W. S. Forwood, of Darlington, Maryland, relates the following case in the *Philadelphia Medical and Surgical Reporter* for October 21st, 1876.

On March 18th, 1873, in the absence of Dr. J. M. Magraw (Harford), the family physician, he was called to see the daughter of W. H. S., aged thirteen, who had met with an accident, the nature of which was related by the mother as follows. With the intention of placing a pile of dishes upon the top shelf of a very high cupboard, the girl mounted an old wooden chair, the back of which had been broken off, with the exception of one of the corner posts, the point of which had been whittled down to about one-fourth of an inch in diameter. While she was straining to reach the high shelf, dishes in hand, the chair tilted over, and in jumping off the falling chair the girl fell astride of the blunt-pointed post, the point of which was forced, by her weight, through several thicknesses of clothing, and, as it proved, some distance into the flesh.

Upon visiting the patient, about two hours after this occurrence, Dr. Forwood found her greatly prostrated from the shock, and suffering with severe nervous chills. With much difficulty, and through the importunities of her mother, he succeeded in getting a view, which revealed a punctured wound immediately to the left of the perinæum, and about two inches equally distant from the anus and from the lower extremity of the vulva. Hoping that neither of these canals had suffered injury, he gave

the patient a stimulant and an opiate, to be repeated at intervals, as might be judged necessary, until recovery from the shock and prostration was established; after which, he advised the administration of a full dose of castor-oil, more especially with the view of acquiring information as to the existence or non-existence of a fistula.

Through a misunderstanding, the patient was not seen again for nearly a week after the occurrence of the accident, when Dr. Magraw was called. As soon as he heard the history of the case, and heard that Dr. Forwood had once visited the patient, and also learning that fecal matter was constantly escaping through the wound, he requested that he should be called in consultation. On the sixth day after the accident they saw the case together; nothing having been done in the interval except what was advised on the occasion of the first visit.

Upon introducing the index finger into the rectum, and at the same time passing a silver catheter into the external wound, it was discovered that the rectum was ruptured at a point immediately above the sphincter ani, not more than one inch above the anus. The external wound being located at least two inches from the anus, and the same distance alike from the median line of the perinæum and the lower extremity of the vulva, there was good reason for supposing that the rectum was penetrated much higher up. The sudden and angular turn of the chair at the moment the point penetrated externally, and before the patient's feet reached the floor, was doubtless the reason why the bowel was wounded at a point so near its external opening.

The treatment was as follows. They first emptied the lower bowel thoroughly, pumping in the ordinary enemata until no trace of fecal matter could be discovered in the discharge. After each injection a considerable portion of the fluid escaped through the fistula. They now determined upon the use of a tampon for the artificial passage. For this purpose they selected a long strip of old soft muslin, about one inch in width. This was first well oiled, and they then, while one finger was in the rectum as a guide, gradually introduced the tent with the other hand, through the external wound, fully up to but not within the walls of the rectum; the finger within pressing back the tent, and keeping it immediately behind the walls of the bowel, with the view to allowing the edges of the same to come into contact with each other, so that union might first take place at that point.

The wound was well filled with the tampon, so as to effectually guard against the passage of feces into it, leaving the edges of the rectal extremity of the wound in contact, hoping thereby to secure union by the "first intention." A bandage was applied to retain the plug *in situ*. The medical treatment consisted, from this date, in the administration of full doses of opium, in quantity and in periods of frequency sufficient to hold the peristaltic action of the bowels completely in abeyance, and by this means, too, to effect the solidification of the feces in a mass too large to enter the wound. The patient was kept in a decidedly somnolent condition for three or four days. No solid food was allowed, a strictly fluid diet being enjoined.

Under this treatment, there was no fecal discharge whatever within a period of four or five days; and then it was passed only *per vias naturales*. The tampon was now removed; and, without an untoward symptom, and without other treatment, the case rapidly progressed to complete recovery. Within



a week after the institution of our treatment the patient was able to move about and attend to her accustomed duties.

### RECENT PAPERS.

- On Osteotomy of a Wedge-shaped Piece of the Tibia and Chiseling through the Fibula in Genu Valgum. By Dr. Max Schede. (*Berliner Klinische Wochenschrift*, December 25, 1876.)
- Contributions from the Dissecting-Room and from Surgical Practice. By Dr. von Patruban. (*Allgemeine Wiener Medizin. Zeitung*, December 19.)
- Extirpation of Lipoma in a "Bleeder": Secondary Hæmorrhage and Subcutaneous Extravasation: Recovery. By Dr. B. Stilling. (*Deutsche Medizin. Wochenschrift*, December 23.)
- Hernia of the Lung. By Dr. Kirchhoff. (*Deutsche Medicinische Wochenschrift*, December 30.)
- Tumour of the Breast: Preventive Ligature of the Veins: Extirpation: Cure. By M. D. Mollière. (*Lyon Médical*, January 7, 1877.)
- On Some Cases of Excision of the Tongue by Different Processes. By Dr. Maracchi. (*Annali Universali di Medicina e Chirurgia*, November 1876.)

## MATERIA MEDICA AND THERAPEUTICS.

WEBER ON THE ACTION OF PILOCARPUM MURIATICUM.—Dr. Ad. Weber describes this substance (*Centralblatt für die Medicinischen Wissenschaften*, No. 44) as a white transparent crystalline salt, with a slightly bitter and astringent taste, soluble in its own weight of water yielding a colourless solution. From 100 kilogrammes (220 lbs.) of jaborandi, 70 grammes (1,540 grains) of the salt were obtained. It may be reckoned that from 30 to 40 grammes of pilocarpin are lost by the process of extraction. The drug was obtained from Pernambuco jaborandi, as it is said that that of Brazil does not contain the alkaloid. This drug eminently possesses those properties, in virtue of which jaborandi is used in practice, viz., strongly to excite the salivary and cutaneous secretions. After the subcutaneous injection of a small dose (half a cubic centimetre of one-half per cent. solution) into the upper arm, the increased secretion of saliva occurred in from three to five minutes, and lasted for hours after that of the skin; in fact it has been observed to cause salivation without affecting the skin. The duration of the salivation and the amount of saliva increases with the dose.

The secretion of sweat generally sets in five minutes after that of the saliva, and usually begins on the head and spreads over the body.

A slight acceleration of the pulse, five to ten beats per minute, is common, though it falls as the cutaneous secretion diminishes. An increase of temperature ( $0.5^{\circ}$  to  $1^{\circ}$  C.) occurs, and a pronounced feeling of chilliness is complained of. The contraction of the pupil begins late, and generally lasts longer than the other phenomena by twelve hours.

With regard to its application in practical medicine, the author recommends it strongly for cases of opacity of the vitreous body following irido-choroiditis, ten or twelve applications producing a most marked effect. In a case of croup in a child, in which tracheotomy had been performed, and which exhibited pronounced œdema of the lungs, the injection of a pravaz syringe full of a two per cent. solution, after a copious secretion of saliva for three-and-a-half hours, when the asphyxia had quite disappeared. No ill effects followed the injection.

W. STIRLING, D.Sc., M.D.

RIEMSLAGH ON CYANIDE OF ZINC IN RHEUMATISM.—In the *Archives Médicales Belges*, M. Riemslagh makes some remarks on the use of cyanide of zinc, recently proposed in acute articular rheumatism. (See LONDON MEDICAL RECORD, October, 1876.) He has tried it in the hospital at Namur. The effects have appeared to him to be uncertain. He generally gave daily from three to five granules of one centigramme of the cyanide, and in some few cases only has he obtained any rapid amelioration: in others there was no effect. He cites one case of a subacute form with great pain where in three days considerable amelioration was obtained. The agent diminished the nervous erethism which gave rise to the pain. One is sometimes so helpless against pain of a rheumatismal origin, that it is well to record these experiments.

GOSSELIN ON INJECTION OF HYDROCHLORATE OF MORPHIA IN THE TISSUE OF THE TONGUE IN CANCER.—In one of his recent clinical lectures, M. Gosselin (*Journal de Médecine et de Chirurgie pratiques*, Dec., 1876) insisted on the value of hypodermic injections in cancerous patients who suffer sometimes such cruel pain. Unfortunately, we know that the calmative power of opiates is rapidly exhausted, so that, as a general rule, when a cancerous patient is likely to live some time, it is prudent at first to exhaust the list of other calmative substances. Chloral in particular may be employed at first with advantage. On coming to opiates, we may employ hydrochlorate of morphia by subcutaneous injection; and we shall be obliged to gradually increase it, and even to arrive at the enormous doses of five or six grains daily.

M. Gosselin has had a patient suffering from cancer of the tongue for two years under his care, and has had recourse to a means which he greatly recommends. Instead of making the injections in some part of the skin he has made them in the diseased organ, the tongue itself, but in the healthy parts, and always on the side of the back of the tongue. The relief obtained has been much more complete, and more rapid. M. Gosselin has confirmed this effect in other cases, though for a shorter period.

VILAPLANA ON THE CURE OF TRAUMATIC TETANUS BY CHLORAL.—In the *Journal de Médecine et de Chirurgie Pratiques* for December, 1876, Dr. Vilaplana, of Santa Coloma, Spain, reports the following remarkable case of tetanus cured by chloral. In the month of September last, I had under my care a patient suffering from a slight wound of the left great toe. After twenty days, an attack of tetanus supervened. I saw him the following day. Trismus was extremely marked, and deglutition was very difficult. There was emprosthotonos, and he complained of severe pains down the vertebral column. I prescribed 10 grammes of chloral in 600 grammes of "eau sucrée," to be taken in twenty-four hours. The amelioration was rapid, but a complete succession of symptoms did not take place until the third day. The quantity of chloral was reduced to 8 grammes, and progressively decreased on the succeeding days. On the nineteenth day he took only 3 grammes. I continued this dose for three days, and then, considering the cure to be complete, I ceased all treatment. The patient suffered from obstinate constipation, which I treated by three pills of extract of belladonna, of one centigramme, which I gave him in two days.

W. DOUGLAS HEMMING.

**SQUIRE ON CHRYSOPHANIC ACID OINTMENT.**—In the *Pharmaceutical Journal* for December 15th Mr. Balmanno Squire publishes a paper, in which he shows that the active ingredient of Goa powder (Bahia or Araroba powder) to which attention was called two years ago by Sir Joseph Fayrer as a remedy in skin-diseases, is chrysophanic acid. In the course of the debate on Goa powder between Sir J. Fayrer, Dr. da Silva Lima, of Bahia, Professor Attfield, and others, it was ascertained by Professor Attfield that the Goa or Bahia or Araroba powder consisted almost entirely (to the extent of 85 per cent.) of pure chrysophanic acid, a principle common to Goa powder and to some other drugs, for example, to rhubarb, dock-root, etc.

The favourite mode of applying it in the tropics seems to be to wet the powder with water, or with vinegar or lemon juice, and to smear the thin paste thus produced on the affected skin. The paste thus produced dries up very speedily on the skin, but not into a cake or crust, or paint of any kind, so that it adheres to the skin, but into its original condition of a fine dry powder, the greater part of which may at once be blown away by the breath, and every fraction of which may be easily rubbed off by the slightest touch. Ointment is unquestionably a much better form of applying the remedy.

So far as Mr. Squire's investigations have led him, he believes that chrysophanic acid is the *active agent* as well as the chief ingredient of Goa powder, and that an ointment of chrysophanic acid is the best mode of using the remedy.

Chrysophanic acid ointment is apt to present a more or less gritty quality; and the object of this paper is to draw attention to a method by which this drawback may be effectually prevented, and the activity of the ointment considerably increased.

The method he has adopted is suggested by Professor Attfield's researches, which prove that chrysophanic acid is more soluble in hot benzol than in any other of the ordinary menstrua. Lard also is soluble in benzol. Mr. Squire accordingly dissolved two drachms of chrysophanic acid and an ounce of lard in the smallest necessary quantity of boiling benzol, applying heat by means of a water-bath. Then, as the brown solution cooled (the vessel containing it being placed in cold water), and the chrysophanic acid, much less soluble in cold than in hot benzol, became rapidly deposited, the mixture was briskly stirred in an evaporating basin. As the mixture speedily became "set", a most perfect ointment was produced. After leaving the ointment spread about the dish for a short time, the benzol almost completely evaporated, leaving it quite hard.

Mr. Squire finds that the properties of chrysophanic acid are by no means confined to its being a remedy for ring-worm, but that it is likely to prove a valuable addition to the list of drugs as a remedy in many other diseases of the skin. He has, for example, obtained some unquestionably good results with it in the treatment of psoriasis, and it is a serviceable application in cases of lupus also.

Goa powder ointment has hitherto been advocated as a mere remedy for ringworm; that is to say, as a merely indirect therapeutical agent, acting solely, or at the least chiefly, by virtue of its presence being antagonistic to the life and reproduction of such vegetable organisms as are wont to infest the human skin. But Mr. Squire finds, from therapeutical investigations, that it is beyond question a valuable remedy also in a large proportion of the *non-parasitic* diseases of the skin.

Some special care is necessary in the preparation of the ointment. In the first place, the acid must be thoroughly dissolved in the hot benzol, and, in the next place, the cooling and evaporation of the benzol must be conducted as rapidly as possible. With this view the process of dissolving may be conducted in a small glass "beaker" placed in a water-bath, and when solution of the acid and the lard has been perfectly accomplished, the solution should be promptly turned out into a cold evaporating dish, placed in cold water, and immediately briskly stirred with a glass rod until the solution has become fully and firmly "set."

**FOSTER ON SALICIN AS AN ANTIPYRETIC.**—Dr. Balthazar Foster (*Brit. Med. Journal*, December) has brought forward the notes of a case of acute rheumatism in which, he says, salicin failed to lower the temperature, to prevent heart-mischief, or to shorten the duration of the disease. The pulse was more decidedly affected, and fell from the time the larger doses were given, and did not rise until the salicin was discontinued.

The following table gives the temperature during the administration of salicin, commenced the morning after admission; temperature the previous evening, 103 F.

Date.	Pulse.	Temperat. Fahr.	Treatment.
Sept. 12	M. 90 E. 88	102.4 102.8	10 grs. of salicin every 2 hours
" 13	M. 72 E. 100	101.6 102.6	
" 14	M. 102 E. 108	101.6 103.4	15 grs. of salicin every 2 hours
" 15	M. 90 E. 90	102.4 102	
" 16	M. 96 E. 96	102.6 102	15 grs. of salicin every 2 hrs. till 2 P.M.; then 30 grs. every 2 hrs. till 10 P.M.; then no medicine except morphia, gr. $\frac{1}{4}$ <i>sub cute</i>
" 17	M. 96 E. 100	102.6 102	
" 18	M. 84 E. 84	101.4 102.2	30 grs. of salicin at 1 P.M. and 5 P.M.; $\frac{1}{4}$ gr. morphia <i>sub cute</i> at night.
" 19	M. 96 E. 84	102.4 102	
" 20	M. 68 E. 72	100.4 101.6	Salicia, 30 grs. at 1 P.M. and 7 P.M.; morphia <i>sub cute</i>
" 21	M. 72 E. 88	101 103	
" 22	M. 72 E. 84	101 102	
" 23	M. 84 E. 72	101.6 103	

After this salicin was discontinued, and the treatment consisted of alkalies by day, and 10 grs. of quinine at night. The temperature on the 24th is not recorded; on the evening of the 25th it was 103° before the quinine was taken; on the evening of the 26th it reached 104.6. After that it never again became febrile.

#### RECENT PAPER.

On Muriate of Pilocarpine. By Dr. E. Bardenheuer. (*Berliner Klinische Wochenschrift*, January 1.

#### PSYCHOLOGY.

**DUFOUR UPON THE PATHOLOGY OF THE HEART IN THE INSANE.**—The *Gazette des Hôpitaux* for December 16th, 1876, gives an abstract of a paper upon the above subject by M. Dufour, Physician to the Asile de Bron, near Lyons. M. Dufour found 44 cases of disease of the heart in 60 of the insane,



being 74 per cent. In the 44 cases the heart was diseased in its muscular tissue, and in its valves. The pericardium was rarely diseased; there were 11 cases of hydropericardium, 5 of milky patches, and 3 of pericarditis with or without general adhesion of the heart. One of the patients had the marks of a sharp attack of pericarditis, without there having been the least suspicion of its existence during life. Among diseases of portions of the heart, those of the mitral valve were the most numerous; in seven cases the mitral was simply thickened, and in 23 atheromatous. The mitral valve was found diseased in two cases without any other lesion; four times it was diseased in common with the aortic sigmoid; more often (six times) it was accompanied by an alteration of the muscle; eighteen times the muscle and the different valves were altered. Lastly, the cardiac tissue alone was diseased in 14 cases; these alterations generally consisting in fatty degeneration, or in simple hypertrophy. The sigmoid valves were diseased in 26 cases. All these lesions appertained to the left heart. The right cavities gave no reason for special mention, except in one case of dilatation, and one of thickening of the tricuspid valve. They, however, participated sometimes in the general augmentation of volume, which was found in 14 cases. The heart was frequently found in a state of fatty degeneration. In one patient, this degeneration caused death by rupture of the heart during defæcation. This case is mentioned as being one of abscess of the heart in the intraventricular septum. This patient, aged 66, had been resident in the asylum 23 years, and was in a state of dementia. The necropsy showed as cephalic alterations congestion of the sinuses, chronic pachymeningitis, arterial atheroma, dropsy of the meningeal cavities, and softening of the brain. The pericardium was filled by a large clot, the heart loaded with fat, and pliable to the touch. On the left side, at the union of the upper with the middle third of the ventricle, there existed a transverse rent, irregular, and containing clots. The internal orifice was large, and was situated between the great pillar and the base of the mitral valve. The coronary arteries and the valves were atheromatous.

Sometimes the heart was found small and atrophied. The aorta participated generally in the lesions of the valves; atheroma was frequent, and the arch was sometimes dilated. In one case the aorta was ruptured, which was the cause of sudden death. The cardiac muscle is not the only one altered in mental disease. M. Dufour has turned his attention to other muscles, but his observations are not yet sufficiently complete for publication.

The author remarks that the study of disease of the heart connects itself naturally with simultaneous and concomitant alterations in other organs, as the liver, kidneys, and spleen. Reciprocally, these are found to be primitive and to produce modifications, in the tension of the circulatory system ulterior to the cardiac lesions. Pulmonary diseases, certain cachexies accompanying hepatic and renal lesions, render it difficult to recognise the exact amount of influence to be referred to each of the lesions observed in those other organs, and to recognise the special action of the cerebral disturbance.

[Dr. Wilkie Burman, investigating this subject in 1873, found the heart diseased in 241 of 500 cases (*West Riding Asylum Reports*).—*Rep.*]

CHARLES ALDRIDGE, M.D.

## RECENT PAPERS.

On Changes in the Heart in the Insane. By Dr. Brochin. (*Gazette des Hôpitaux*, December 16.)  
On the Melancholic Initial Stage of Mental Diseases. By Dr. Witkowski. (*Berliner Klinische Wochenschrift*, December 11.)  
Contribution to the Statistics of Insanity. By Dr. Arthur Mitchell. (*Journal of Mental Science*, January 1877.)

## OBSTETRICS AND GYNÆCOLOGY.

DEPAUL ON ABORTION.—In the *Journal des Sages-femmes*, Nov. 1st and 16th, 1876, Professor Depaul draws attention to a peculiar condition of the os uteri as a cause of abortion. He says that the neck of the uterus is a sort of sphincter muscle, and that in some women this is in a lax condition, predisposing readily to abortion. There is often a special irritability of the uterus, exciting it to relieve itself of its contents. There are in an abortion two distinct acts; the expulsion of the embryo, and the expulsion of the placenta, which latter is effected one, two, fifteen days, or even longer, after that of the embryo.

BAILLY ON THE LENGTH OF THE FRÆNUM OF THE TONGUE.—M. Bailly (*Journal des Sages-femmes*) remarks that, instead of the condition known as tongue-tie preventing the child from sucking, it aids it in the performance of that function. It is but a vulgar error to suppose that tongue-tie is the cause of the child being unable to seize the teat. On the contrary, M. Bailly has seen a case where the tongue was perfectly free, unbridled by a frænum. The child in this case was unable to take the breast, but had to be fed by the bottle, because its long unbridled tongue was glued to the roof of its mouth. The child was unable to depress the tongue and seize the nipple.

GÉRY ON KNOTS IN THE UMBILICAL CORD.—In *L'Union Médicale*, Oct. 1876, Dr. E. Géry remarks that although many writers on this subject have considered it of little importance if a knot be formed in the cord, he himself does not consider it so unimportant. He relates two cases of death of the fœtus caused by this accident. In the first case, the mother felt the foetal movements cease at seven and a half months. Labour supervened at term, when a dead child was born presenting signs of intra-uterine death of about a month's standing, and having a tight knot in the cord. In the second case the mother was quite well, and felt the foetal movements at the usual period. Dr. Géry saw her at the sixth month on account of some œdema of the ankles, and then heard distinctly the foetal heart. She was delivered at the seventh month of a dead female child, with a knot in the cord. It had apparently been dead about a week. Dr. Géry feels sure that in both cases death was the result of arrested circulation in the knot in the cord.

BUDIN ON MODIFICATIONS OF THE FÆTAL HEAD DURING LABOUR.—In the *Gazette des Hôpitaux*, Oct. 1876, M. Budin has some notes on the elongated forms which the head offers in vertex-presentations, and also on the flattening of the head from vertex to base in face-presentations. He has found the suboccipito-mental to be the longest diameter, which extends from the chin to a point between the angle of the occiput and the anterior fontanelle. If the diameters be measured directly after birth, they are as follows: Occipito-mental, 12 centimetres; Occipito-frontal, 11 centimetres; suboccipito-breg-

matic, 9 centimetres. If measured a day or two later, they are—Occipito-mental, 12.5 centimetres; occipito-frontal, 11.5 centimetres; suboccipito-bregmatic, 9.5 centimetres. They are therefore larger than at birth. As for the maximum diameter, it diminishes markedly during the first days of extra-uterine life; it had therefore increased during labour.

**PILAT ON OBLITERATION OF THE OS UTERI DURING PREGNANCY.**—In the *Journal de Médecine* (Dec. 1876) is a case of obliteration of the os uteri during pregnancy, which came under the care of Dr. Pilat. The patient, about 35, a primipara, had never been ill, and had not been under any medical treatment. Dr. Pilat, on examining during labour, felt two projections of the size of a pea, separated one from the other by a hard cicatricial tissue. They were the remains of the os uteri. Dr. Pilat made a transverse incision first, and then another from before backwards; the artificial opening thus made easily dilated, and the labour was completed without any further delay.

[This case cannot apparently be accounted for, unlike a case reported lately in the LONDON MEDICAL RECORD, where the obliteration was ascribed to cauterisation. In the absence of an obvious cause, this condition has been put down as the result of excessive copulation.—*Rep.*]

**LAFARGUE ON THE MEANS RECOMMENDED BY EXPERTS FOR RECOGNISING ABORTION.**—In the *Journal de Médecine*, Dec. 1876, Dr. Lafargue calls attention to the case of a poor girl condemned to prison for three years, on the evidence that she had taken some savin and had aborted. There was absolutely no evidence in this case that the savin had an oxytocic effect. Dr. Lafargue remarks that the public in general, and judges in particular, still cling to the vulgar and exploded idea that such drugs as iron, savin, rue, &c., are abortives. He asks, What medical man, wishing to bring on an abortion for some contraction, would be so simple as to rely on one of these drugs? Why then should he come before a tribunal to declare these substances, in which he himself has no trust, to be abortives?

**DEPAUL ON AN UNCOMMON FORM WHICH THE UTERUS MAY TAKE DURING PREGNANCY.**—In the *Archives de Tocologie*, Dec. 1876, M. Depaul points out the differences between a partial retroversion of the gravid uterus and an outgrowth, as it were, of the organ under the promontory of the sacrum. It is a result of arrest of growth in one part of the uterus causing increased action in another part. This part is generally in the posterior wall of the uterus, and has been called sacciform development of the uterus. Depaul says it is incorrect to describe this condition as partial retroversion of the uterus, as has been done by many authors. One of the consequences of this sacciform development is the displacement of the os uteri which it causes. Sometimes in these cases it is impossible to reach it, and it then becomes a serious complication in labour. At the same time, there are other pathological conditions of the uterus which are capable of displacing it in a similar manner.

FANCOURT BARNES, M.B.

**NOTTA ON A CASE OF PERFORATION OF THE BLADDER BY A PESSARY.**—At a recent meeting of the *Société de Chirurgie* of Paris (*Journal de Médecine et de Chirurgie pratiques*, Dec. 1876) M.

Notta, of Lisieux, narrated the case of a woman who for a long time had worn a winged pessary for a procidentia of the cervix. After an effort she suddenly felt a violent pain in the belly, and lost the power of holding her urine. It was then perceived that one of the wings of the pessary had penetrated the bladder: the wound contracted a little, but it became necessary to perform the operation for fistula. This case shows that pessaries may be dangerous: M. Notta knew a case in which a pessary ordered by a quack caused abscesses and fistula, and another in which death was the result of its untimely use.

W. DOUGLAS HEMMING.

**GOLDSCHMIDT ON AUTOTRANSFUSION IN POST PARTUM HÆMORRHAGE.**—Dr. Goldschmidt, of Berlin, has lately published (*Deutsch. Med. Wochenschrift*, Dec. 2, 1876) the following remarkable and instructive case. He says:—On October 30th, I was called to a woman who had been delivered two hours previously, and who exhibited alarming symptoms.

The history of the case was as follows. I had attended her in three previous pregnancies. On the first occasion I had to remove the after-birth after it had been retained an hour; and on the second and third occasions I was called in to remove the placenta which had been retained several weeks after abortion. Last June she had considerable hæmorrhage, but she bore it without detriment to the child. The child was a full-term strong female. The midwife said that the labour was very quick. After the delivery of the child the uterus tilted over forwards, and at the same time there was very severe hæmorrhage. The midwife succeeded in removing the after-birth and replacing the uterus, but she sent for me at once.

On my arrival, I found the woman insensible and pulseless. The uterus was lying over the pubes, well contracted, and about as large as the fist. Both lower extremities were at once enveloped in bandages, strong stimulants were administered, and the husband was sent to a chemist's for tinctura ferri, acetic ether, and ergot. We succeeded in restoring the woman to her senses, and I was then able to make a more precise examination. The contraction of the uterus above the pubes remained as before. *Per vaginam* one came upon a series of folds, so that the mouth of the womb was not at once discoverable. It lay somewhat behind, but when it was reached the hand could be introduced into the flabby uterus with ease. Behind the entrance lay a half-round, tolerably hard mass, which might be taken either for a new growth in the posterior wall, or a retroflexed uterus.

The patient, who in the meantime had come to herself, began to complain of so much pain in her feet that I was compelled to remove the bandages, which I was the more induced to do because her pulse had become strong again. Unfortunately, collapse and death followed immediately. After death we satisfied ourselves as to the contraction of the uterus above the pubes.

The necropsy revealed a very lengthened, very thin, and lax uterus, the lowest portions of which were as thin as card-board, and contained some small placental remains.

Dr. Goldschmidt goes on to remark:—"There is no doubt that atony was the cause of the hæmorrhage in this case. The continued contraction of such a limited portion of the anterior part of the uterus is of great interest. It is evident that atony



may exist, although the uterus feels firmly contracted externally.

"In the second place, the auto-transfusion is interesting. It is quite certain that the woman would have been saved had we not listened to her complaints and removed the bandages."

[Now is it a fact that we can save the life of a woman in extreme cases of flooding by bandaging the lower extremities? In our standard the mention of such a simple procedure is entirely omitted. Barnes (*Obstetric Operations*, p. 559) says that in cases pending transfusion we should raise the body, so that "the head depending may receive by gravitation what blood there is left in the vessels." Ramsbotham, Schroeder, Hervieux, and Leishman say nothing about it. In Cazeaux and Farnier's Midwifery, 5th American edition, 1870, compression of the aorta is suggested, but there is no mention of bandaging the lower limbs.

[It is quite certain that we can, by means of an elastic bandage, almost entirely empty the blood-vessels of the lower limbs. We have only to watch an amputation after the application of an Esmarch's bandage to be convinced of this. In short, the blood circulating in the lower limbs may be "transfused" to the trunk, head, and upper extremities, without the slightest difficulty. But the lower limbs could not be *entirely* deprived of their blood-supply for more than a very limited period, without endangering the safety of those parts. It would be better, therefore, under all circumstances, to use such pressure only as would reduce the circulation to a minimum. This could be easily accomplished by watching the artery behind the inner malleolus with the finger. The upper extremities might be treated in a similar manner, leaving the radial artery free for examination.

[There is no doubt that in this way we may gain a few ounces of blood to supply the vital organs of our patient at that critical moment when hæmorrhage has ceased, but the patient is in imminent peril from syncope.—*Rep.*]

ALFRED SHEWEN, M.D. Lond.

GUÉNIOT ON ACCIDENTS TO NEWLY BORN CHILDREN.—In the *Journal des Sages-Femmes*, Dec. 16th, 1876, M. Guéniot calls attention to the swelling of the breasts, which sometimes sets in about a week after a child is born.

There may be a considerable secretion of milk, which may result in an abscess. This may happen to a child irrespectively of its sex. He also draws attention to hæmorrhage during pregnancy from ulceration of the os uteri. This form of hæmorrhage is not very rare.

#### RECENT PAPERS.

On the Lacerations of the External Genital Organs during Labour. By Dr. J. Matthews Duncan. (*Obstetrical Journal*, January 1877.

On the Treatment of Rupture of the Perinæum. By Dr. Bantock. (*Ibid.*)

Arrested Development of the Fœtus with Hæmorrhage. By Dr. David Young. (*Ibid.*)

On Suckling. By M. Archambault. (*Le Progrès Médical*, January 6, 1877.)

On Some Remarkable Cases of Ovariectomy. By Dr. J. Veit. (*Berliner Klinische Wochenschrift*, December 11, 18, 25.)

Statistical Report of the Gynæcological Clinic and Polyclinic of the University of Breslau during 1873-75. By Dr. L. Landau. (*Berliner Klinische Wochenschrift*, November 27, December 4, 18.)

Researches on the Placental Circulation after the Birth of the Child. By Dr. A. Schücking. (*Berliner Klinische Wochenschrift*, January 1.)

Treatment of Uterine Hæmorrhage dependent on Faulty Insertion of the Placenta. By Dr. Bailey. (*Bulletin de Thérapeutique*, December 1 et seq.)

On Instruments intended to replace the Forceps and Mechanical Traction. By Dr. Charpentier. (*Annales de Gynécologie*, December 1876.)

## NEW INVENTIONS.

### THE SPECIALITÉ CHAMPAGNE.

THE Spécialité Champagne recently introduced by the well-known firm of Feltoe and Sons of Albemarle Street is a most agreeable and wholesome champagne, possessing the natural refreshing vinous flavour and bouquet peculiar to high-class wines. It is of medium dryness, avoiding the extremes which suit only a minority of wine-drinkers, but is sufficiently dry to suit the palate of the instructed connoisseur. It is extremely well suited for use by invalids, for whom the valuable qualities of a high class of champagne are so often found useful. It will be found to compare somewhat more than advantageously with the choice brands which have secured an old reputation and command the highest prices. The value of a brand is more strongly felt in respect to champagne than perhaps in regard to any other wine, owing to the peculiarities of the manufacture of champagne, which leaves open a large field to the skill of the maker. This excellent wine will, we believe, maintain and enhance the reputation of the "Spécialité" brand.

### MORRANT BAKER'S FLEXIBLE TRACHEOTOMY-TUBE.

Mr. Morrant Baker has recently introduced into surgical use a red India-rubber tube of the shape of an ordinary tracheotomy-tube. It is manufactured by Messrs. Millikin, St. Thomas's Street. This tube was highly eulogised in a recent discussion at the Royal Medical and Chirurgical Society, and its flexibility and smooth softness offer obvious advantages in use.

### CLARK'S PYRAMID NIGHT-LAMPS, FOOD-WARMERS AND NIGHT-LIGHTS.

Much thoughtful ingenuity has been expended in the construction of night-lights and food-warmers for infants and invalids. The result is, that an excellent light in the sick-room or nursery, and a perfect means of preparing or warming the food necessary to be taken through the "small hours", is now obtainable at a small cost. Mr. Clark's food-warmer consists of a tin vessel for water in which stands an earthenware pannikin for the food. Underneath this stands the lamp, a cemented base holding a pyramid night-light; this being covered by a glass shade, concentrates the heat of the flame on the bottom of the tin vessel, thus keeping the water in the jacket at boiling-point and facilitating the warming of the required food. Mr. Clark claims for his night-lights perfect steadiness of burning, a proportionately large amount of light and heat, and the advantage that they may be extinguished and relighted at pleasure. As obviating all dangers from the risk of fire being communicated to the night-garments of the nurse or attendant making use of these night-lamps, we consider the glass shade, independently of its use as a concentrator of heat, a great improvement on the ordinary form of unprotected night-light.

## REPORTS OF FOREIGN SOCIETIES.

### MEDICAL SOCIETY OF BERLIN.

October 11, 1876. *Aphasia*.—Dr. Wernicke gave a report of a case of aphasia in the Charité Hospital. It belonged to the category called by him incoördinate aphasia (*Leitungs-aphasie*), and was complicated with right-sided hemiparesis and hemiopia; and, after the other disturbances of speech had been improved, a state of complete *alexia* was left, so that the patient could not read what he himself had written some time before.

Previously to this he had seen another case, in which there were incoördinate aphasia and right hemiopia, and in which, after a long course, inability to read remained as the chief symptom. A *post mortem* examination was made in this case. There were softening of a part of the great ganglia, and of the left hemisphere, and a cyst in the outer part of the hemisphere, and close to the island of Reil; also an old cicatrix on the outer side of the posterior cornu of the spinal cord. There was no change in the thalamus opticus, optic tract, corpora geniculata, or right hemisphere.

*Balsam of Peru as a Dressing for Wounds*.—Dr. Wiss made a communication on the surgical uses of balsam of Peru. He had used it with excellent results in the treatment of wounds of all kinds—in-cised, gunshot, and suppurating wounds, and wounds attended with loss of substance. Its application was attended with a sensation of burning; but all pain soon ceased, even in the most severe wounds. Its application to recent wounds did not produce inflammation or suppuration; and if these were already present, they ceased. In none of the cases thus treated by him were there any signs of putrefaction, even in the most unfavourable conditions of locality and climate; and in all, even in lacerated wounds, union took place by the first intention. In one case, a young man had received a lacerated wound of the head from a blunt-pointed instrument. The aponeurosis of the occipito-frontalis was laid bare on the top of the head, and the skin lay separated in three flaps. After arresting the hæmorrhage and cleansing the wound, Dr. Wiss poured Peruvian balsam into it, and applied a compress and bandage. The next day he was astonished to find that the wound had half healed, and that there was no suppuration; and in two days the healing process was completed. In 1875 he had under his care a boy, the points of whose right middle and ring fingers had been torn off by the fall of a sharp plank. On the ring-finger only there was a thread of skin remaining. He dressed the wound with Peruvian balsam. On the second day the gaps were filled up with a brawny but elastic mass, which at first sight resembled a blood-clot, but was found to consist of smooth uniform granulation. The process of healing went on for a fortnight longer. The shred of skin on the ring-finger dried up, and was cut off. Beyond a small smooth scar in the middle of the second finger, there was nothing to show that so severe an injury had occurred. In cases of deeply suppurating whitlow dressed after incision with balsam of Peru, the suppuration soon ceased, the inflammation and swelling of the parts abated, and recovery took place more rapidly than under any other mode of treatment. The Peruvian balsam appeared to Dr. Wiss to have an important effect on the mode of production of

granulations, rendering the cell-growth regular, and obviating all the ill effects of continued suppuration. He regarded it also as a valuable antiseptic, which could be easily used in private practice. His observation of the power of balsam of Peru to prevent suppuration reminded him that its use had been recommended by Marcus in internal diseases, especially in chronic pulmonary catarrh. In two well-marked cases of this affection, of several years' standing, in old women, where auscultation and percussion showed the lung-tissue to be perfectly sound, and there was abundant puriform yellow expectoration, he succeeded in effecting a cure by the use of an emulsion of balsam of Peru in yolk of egg (4 parts in 120: dose, one table-spoonful every two hours). In one case recovery took place in eleven days, and in the other in three weeks; there was no return of the malady. He had previously given emetics and copahiba in these cases: under the use of the latter remedy, the quality of the expectoration had been improved, but its quantity had not been reduced.

October 18. *Case of Nervous Disease in a Child*.—Dr. Senator related the case of a boy, aged 8, who, at the age of nine months had convulsions, and was afterwards seized with a peculiar affection of the lower limbs, of which he was still the subject. He could neither walk nor stand: all attempts to do either produced, in rapid succession, peculiar hopping or tripping movements of the feet, the points only of which touched the ground, in consequence of contraction of the muscles of the calves. When he lay down, the thighs were powerfully adducted, the knees slightly flexed, and the feet in the position of talipes equino-varus, the right being crossed over the left. Reflex irritability was increased; there was no "tendon-reflex"; active movements were carried out with difficulty by overcoming the contraction. There was moderate atrophy of the legs. Sensation was in no way impaired; the sphincters acted normally; the arms, which were said to have been some time ago affected, and to have become wasted in a similar manner, were now quite normal. There was no disturbance of the sensorium, or of the special senses: speech was somewhat impeded, apparently in consequence of the tongue being rather large. Dr. Senator thought that the case was one in which a diffuse (perhaps inflammatory) change had taken place in the central nervous system, commencing as an acute affection, and gradually receding to its present form. The present locality of the disease was probably the lower dorsal region of the spinal cord. As regarded the transverse extension of the affection, if, as he suspected, it had its seat in the spinal cord, the strongly marked contraction must perhaps be referred to an affection of the lateral columns.—Dr. Leyden asked why Dr. Senator did not regard the case as one of essential infantile paralysis.—Dr. Senator replied that there was a certain amount of analogy, inasmuch as both affections began with general symptoms, and were attended with more or less extensive paralysis. But in infantile palsy the paralysis and the atrophy—which did not depend merely on loss of function—were the principal and primary conditions; contractions appeared later, and the deformity which arose was partly due to the contractions, and partly, as Hüter and Volkmann had pointed out, to mechanical influences. In the present case, on the other hand, there were spastic contractions, increased or excited by tactile or mental influences, and ceasing during sleep or under narcotism. The tactile irritation produced by placing the feet on the ground probably



explained the peculiar movements, which in this form were not observed in typical cases of infantile palsy. The atrophy of the muscles was only moderate, and apparently affected all the muscles of the leg: it was uncertain whether it depended on central causes (degeneration of the trophic ganglia in the anterior cornua of the affected portion of the dorsal spinal cord). In reply to Dr. Westphal, Dr. Senator said that electric irritability, so far as could be ascertained from the restlessness of the child, was not remarkably diminished, especially as regarded the induced current.—Dr. Leyden remarked that this was not inconsistent with infantile paralysis.—Dr. Henoch said that, as the upper limbs appeared to have been affected at first, the seat of the disease was above the dorsal region of the spinal cord.—Dr. Senator replied that he assumed that the morbid process was diffuse at first, and afterwards became located in the dorsal region.—Dr. Henoch related the particulars of a similar case published in the first volume of the *Charité Annalen*, in which a necropsy was made. The subject was a boy, aged 7, whose previous history was imperfect. It was said that he had measles at an early age, and that the illness was followed by symptoms similar to those in Dr. Senator's case. He had contractions of both upper and lower limbs, with atrophy of the muscles and, as the necropsy showed, of the bones. The case differed from Dr. Senator's, in that intelligence was not developed in proportion to the age, and that speech was greatly impeded. The child had diphtheria, and died in convulsions. At the necropsy, the spinal cord was not examined; both frontal lobes of the brain were much atrophied. The dura mater was raised in vesicles from which clear serum escaped. The convolutions were considerably atrophied, but otherwise presented no change. The case was then one of congenital affection of the brain, to which the contractions were probably due. Analogy would lead to the suspicion of a brain-lesion in Dr. Senator's case.—Dr. B. Fränkel remarked that such cases were partly amenable to treatment. By the use of proper mechanical appliances and orthopædic treatment, walking erect could be rendered possible, even when all the muscles of both lower limbs, except the tensor fasciæ latæ, were paralysed and atrophied.

*Researches on Inflammation of Bone.*—Dr. F. Busch read a paper on this subject. His first experiments consisted in perforating the medullary canal of a long bone at two parts, introducing a strong wire and breaking up the marrow, and then passing a fine platinum or iron-wire through from one hole to the other, fastening it, and applying the electric current. Latterly, he had also in several instances followed another method, which consisted in boring a hole in the medullary canal and introducing a plug of laminaria. In these cases he sometimes made a second hole to allow the escape of secretions; while in other instances he omitted this, so that the medullary cavity was entirely closed in by the bone and the laminaria plug. Specimens and microscopic preparations, with photographs, were shown to illustrate the effects produced. All the three tissues constituting the diaphysis—periosteum, marrow, and bone—participated in the inflammation. The first result in all cases was inflammation of the periosteum. This became swollen and thickened, and deposited very distinct masses of osteoid tissue on the outer surface of the bone. The periostitis was suppurative only when the whole thickness of the bone became necrosed. Into the above-named deposits abundantly vascular processes of the connective tissue of

the periosteum penetrated deeply, generally as far as the outer surface of the bone. The periosteal deposits either had large cancelli, or were tolerably compact. Even where the cancelli were large, the outer layer was compact; hence it was to be concluded that the cancellous structure was secondary, the deposit being at first compact. The marrow of the cancelli contained numerous giant-cells, generally lying free in the connective tissue filling the cavities of the cancelli. The participation of the marrow in the inflammatory process was shown by increased vascularity, loss of fat, substitution of redness for the yellow colour, and ossification. Dr. Busch regarded ossification of the marrow as not so regular a symptom of osteitis as the thickening of the periosteum and the formation of osteoid deposits. While a strong irritant applied to any part of a bone produced periostitis, the marrow did not necessarily participate. He had often seen bones, especially those in which the inflammation had been communicated from one to another, in which the periosteum and osseous tissue were distinctly inflamed, while the marrow remained unaffected. The bone participated in the inflammation through widening of its vascular canals. Under the influence of the enlargement of the vessels and the proliferation of the connective tissue accompanying them, the Haversian canals became widened into large irregular spaces, which finally broke through the compact tissue of the bone. In addition, there was the process described by Volkmann, of development of vessels transversely to the systems of cancelli. Dr. Busch had never seen any appearance indicating that the bone-corpuscles took part in these changes; and he agreed with Hermann Meyer and Billroth in regarding these, as well as the calcified bone-substance, as being incapable of taking any active part in inflammation; while they were compressed or destroyed by the active tissues—the blood-vessels and connective tissue. The connective tissue filling the large vascular spaces was then not to be regarded as the result of removal of lime-salts from the bone, but as the result of excessive growth of the connective tissue normally accompanying the vessels. There were, in Dr. Busch's opinion, some remarkable differences between inflammation of bone and that of soft tissue. While, in the latter (except in the case of the large abdominal glands), inflammation generally tended more or less to suppuration, and proliferation appeared later and only occasionally, inflammation of bone began with proliferation, which afterwards reached an extent not observed in soft tissues. He regarded inflammation of bone as neither suppurative, nor as adhesive in the Hunterian sense; not as parenchymatous or exudative (Virchow), but rather as hyperplastic. In no cases were inflammatory new formations so evident as in inflamed periosteum. It seemed as if the type of inflammation in bones was different from that in the soft parts. In reply to a question from Dr. Leyden, Dr. Busch said that the giant-cells in inflamed bone assumed various forms, sometimes stellate with several projections, sometimes round. Their origin was difficult to ascertain; but Dr. Busch was convinced that they were closely related to and even sprang from the cells described by Gegenbauer as osteoblasts. The distinction between the osteoblasts and the osteoclasts of Kölliker did not appear to him to be well marked. The same cells which at a certain time contributed to the building up of bone-tissue might perhaps, with slight changes, such as multiplication of nuclei, assume the opposite function.

November 1. *An extremely Thin Uterus.*—Dr.

Goldschmidt showed an uterus taken from a woman who had been confined on the previous day. The walls were very thin, and the organ was much increased in length. Towards the cervix it was scarcely thicker than card, while at the fundus the greatest thickness was below the normal. Here and there, on the inner surface, were some fragments of placenta.

*Carcinoid of the Pharynx.*—Dr. Fränkel showed a preparation taken from a patient of Dr. Behrend, who died on October 24. Dr. Fränkel had had an opportunity of watching the case, since September 1st, and made the *post mortem examination*. The patient reported that in July he felt a difficulty in swallowing on the right side. On the right side of the pharynx was a large tumour, extending inwards nearly to the middle line. On the right side of the neck there were numerous enlarged lymphatic glands—some as large as hens' eggs; some of them were very immovable, as if they were adherent to the spinal column. By bimanual palpation the tumours could be recognised as connected with the greatly swollen tonsillar lymphatic glands. There was mechanical immobility of the velum palati on the right side, so that here the naso-pharyngeal passage could not be closed, although the palato-glossus and levator veli muscles acted normally. At the first examination the tumour was found to have already invaded the larynx, producing immobility of the right vocal cord, which in respiration as well as in phonation remained fixed near the middle line. The patient suffered also from bronchitis putrida with foetid expectoration; but he could not say whether this had preceded or followed the appearance of the tumour. He died of pneumonia supervening on the bronchitis. The tumour which, on September 1, was only slightly ulcerated, had become the seat of a deep ulcer. There were indications of narrowing of the larynx, but not to such a degree as to render tracheotomy necessary. The tumour was a little more than three inches long from above downwards, and an inch and three-quarters in its greatest transverse diameter. It began above, near the uvula, passed forwards slightly beyond the pharyngo-palatine arch, and posteriorly reached as far as the middle line. Below, it filled the whole of the pharyngo-laryngeal recess; the thyroid cartilage was here exposed, and the larynx was perforated in two places. One hole was in the lateral part of the larynx, the other was below the vocal cord, which was undermined as far as its anterior insertion. The base of the ulcer was covered with pultaceous deposit: its edges were indurated, with cheesy deposit at some points. The tonsils were both present, though atrophied.

*On Removal of the Astragalus, with Remarks on Resection of Joints.*—Dr. E. Küster related a case of fracture and dislocation of the astragalus from a fall in a lad aged 16. On his admission into the Augusta Hospital, there was a projection beneath the skin of the right ankle, caused evidently by a tarsal bone. As the projecting bone could not be reduced, and as the skin, though unbroken, was so much pressed on that sloughing was inevitable, Dr. Küster made an incision over the part and removed the bone, which was found to be the posterior portion of the astragalus; the back of which, with the articulating surface for the scaphoid bone, remained in place. The wound was dressed antiseptically, and healed without suppuration or any constitutional disturbance, except some rise of temperature on the day following the operation. The patient was dismissed cured at the end of two months with very good use of the foot, which had improved still more when the case was

related, so that, both in appearance and in function, scarcely any difference from the normal state could be recognised. Dr. Küster summed up his remarks on resection as follows. 1. Alternative injections should always precede more severe measures in cases of fungous and sero-purulent synovitis, as they sometimes lead to recovery. 2. Antiseptic incision of joints is a tolerably safe measure, and is indicated (*a*) in suppuration, whether in wounded or closed joints; (*b*) in fungous synovitis, which cannot be overcome in any other way; (*c*) in old irreducible dislocations, in order to be able to act directly on the luxated parts. 3. In all joints, even the knee, partial is to be preferred to complete resection, if the disease admit of it. 4. In total incision of the knee-joint the surgeon may endeavour, by preserving the healthy portions, to obtain a movable joint. 5. In dislocation of the tarsal bones it is best to perform primary resection.—Dr. von Langenbeck, speaking of incision in cases of irreducible dislocation, said that he had operated in this way in four cases where the head of the humerus was firmly fixed under the coracoid process; in none of them, however, could the head of the bone be moved from its place, and in one case it was resected. He approved of partial resection in cases of injury, but thought its application doubtful in cases of disease.—Dr. Küster said that, as far as he remembered, the cases of dislocation referred to by Dr. von Langenbeck were all of old standing. Sometimes, however, cases were met with where the dislocation had existed a few weeks, and in these incision might be made with advantage. As regarded partial resection in cases of caries, the antiseptic treatment had made a great change in the conditions. Under its use he had seen recovery in a number of cases of vertebral caries with abscess, and he believed that, in partial resection of the carpus for caries, it would prevent the progress of the disease.

*Dropsy after Typhoid Fever.*—Dr. Henoch related the case of a girl, aged 9, who was admitted into the Charité Hospital, on December 3, 1874. She had been attacked with typhoid fever four weeks previously, and on admission had numerous abscesses on the scalp, and a temperature of 103.6 Fahr. In ten days the abscesses had healed, and she was free from pain. There now appeared extreme debility and emaciation with sordes on the teeth and tongue, coryza, and bronchial catarrh; but what especially attracted attention was œdema of the eyelids. The urine, carefully examined, gave no traces of albumen. The abdomen was distended, and a considerable degree of ascites was detected. There were no other morbid symptoms, and all the organs performed their functions normally. Some days later there was œdema of the hands; the feet remained free throughout. The treatment consisted of decoction of cinchona and port wine, with nutritious diet: recovery was rapid, and the child was dismissed cured on January 27th. The occurrence of dropsy from typhoid fever was rare. It had been noticed by Griesinger and Liebermeister, and by Rilliet and Barthez. It might be due to—1. Anæmia or hydræmia; 2. Debility of the heart; or 3. Changes in the liver. He hoped the members of the Society would keep a look-out for the occurrence of this sequela in the present epidemic.—Dr. Köster asked whether there might not have been tuberculous peritonitis.—Dr. Henoch replied that the result of the case negatived this supposition. At least, he had never seen a case of recovery from true tuberculous peritonitis, and the presence of this affection would not explain the œdema of the face and hands.



# IMPERIAL ROYAL MEDICAL SOCIETY OF VIENNA.

November 17th, 1876. *Pathology of the Brain.*—Dr. Leidesdorf showed the brain of a young man who, in August last, was seized with the symptoms of an acute mental disease, and died with very marked symptoms of depression. The brain showed, not anæmia, which has been assumed by many to exist in such cases, but hyperæmia to a very high degree; so that not only were the capillaries everywhere strongly injected, but in the medullary substances also large dilated vessels were found. This was the second case in which Dr. Leidesdorf had found excessive cerebral hyperæmia in connection with symptoms of depression during life.

*On the Participation of the Spinal Cord in the Pathological Process of Progressive Paralysis.*—Dr. Jakob Weiss said that earlier writers had called attention to the severe motor disturbances occurring in some cases of progressive paralysis, and had examined the spinal cord in those cases without being able to arrive at definite results. Dr. Weiss had examined the cord in all the *post mortem* examinations of the cases in Dr. Leidesdorf's clinic, and believed he had found reason for attributing the above-mentioned motor disturbances to a myelitic affection of the cord. He found in such cases, in considerable abundance, in the dorsal spinal cord, and also in the lower part, especially in the so-called postero-lateral columns, accumulations of granule-cells. The pathological importance of this discovery Dr. Weiss considered, from his experiments on animals, to be indisputable; individual clinical facts also indicated beyond doubt that the spinal cord was implicated in this disease. As regarded the origin of the granule-cells, Dr. Weiss believed that they arose from cells which were smaller than lymph-corpuscles, showed a double contour and finely granular protoplasm, and possessed a distinct nucleus.—Dr. Heschl remarked that he regarded the granule-cells as generally arising from exudation-cells; in some cases, however, he had noticed in their interior a portion of cylinder, so that they would seem to have arisen from degeneration of nerves.

*Medication of the Larynx.*—Dr. Roth showed an instrument for making applications to the larynx, consisting of a properly curved tube of gutta percha, with a fine opening, and fitted with a piston, by which medicated fluid could be applied either in drops or in a stream.

November 24th. *Ligature of the Carotid for Facial Neuralgia.*—In three cases of facial neuralgia, in which the ordinary means had proved ineffectual, Dr. Patruban had tied the common carotid artery of the affected side. In two cases the operation was perfectly successful; in one, it was followed by improvement which had lasted three years. He regarded the operation as quite free from danger, and, as indicated in cases where other means failed to relieve the facial neuralgia, from which the patients desired to become free at any price.—Dr. Weinlechner remarked that he had regarded ligature of the carotid as indicated in otherwise incurable cases of facial neuralgia, in which symptoms of hyperæmia were present. He related a case which did not speak much in favour of the operation. It was that of a man in whom facial neuralgia followed a gunshot wound, on account of which the carotid artery had to be tied.

*Pathology of the Cerebral Blood-Vessels.*—Dr. H. Obersteiner said that he had found that even in healthy persons the vessels of the brain rarely showed

a normal structure. In all brains he had been able to find, especially in the adventitia of the smaller vessels, fatty granules in larger or smaller quantity; these he regarded as the remains of fatty granule-cells constantly to be found in the brain, especially on its vessels, in early life, and which indicate the encephalitis of childhood, described by Virchow. He also constantly found, in the lymph-sheaths of the cerebral vessels, yellow and brown pigment, which he considered not as produced from the blood, but as a result of oxidation of fat. The perivascular and adventitial lymphatic spaces he also found moderately dilated in the normal state. Fatty and calcareous change was not unfrequently found in the muscular coat of the vessels, especially in the basal ganglia, even in healthy brains. Dr. Obersteiner frequently saw the middle coat in a state of degeneration as regarded connective tissue, so that in many cases the lumen of the vessels was quite occluded at some points. These observations showed the necessity of caution in interpreting the meaning of appearances found on the brain.

December 1. *Multiple Tumours.*—Dr. Chiari showed a case of multiple tumour formation. It was observed in Professor Sigmund's clinic, in an old man who had for four years suffered from tumours, which were mostly developed under the skin of the extremities, and which coincided with a general enlargement of the lymphatic glands. Under the use of iodide of potassium, the tumours were reduced. Two of the tumours sloughed. By the sloughing of one the right femoral artery was exposed, and had to be tied in two places. The man died with symptoms of general exhaustion. On *post mortem* examination there was found general marasmus, with considerable anæmia, slight dysentery, follicular ulceration, and a number of tumours in various organs. They were most numerous in the muscles, where they varied in size from a hazel-nut to two fists; single nodules were also seen in the lymphatic glands and in the left lung. The tumours were round, generally hard, dark red on section, yellowish at some points (from fatty degeneration). On microscopic examination, they presented the characters of sarcoma. Dr. Chiari believed that they were primarily developed in the muscles.

*Ligature of the Carotid for Facial Neuralgia.*—Dr. Patruban described six more cases of ligature of the carotid for facial neuralgia. He had met with only one fatal case, due to the unhealthy condition of the patient.

*Obstinate Vomiting.*—Dr. Patruban showed a concretion taken from a patient who had been for several years the subject of continued vomiting, for which no cause could be discovered. At the necropsy a concretion was found in the cystic duct, reaching as far as the point of junction with Wirsung's canal. The latter was very much dilated, and the gall-bladder was wasted. Dr. Patruban believed that the vomiting might have been due to regurgitation of the pancreatic juice into the stomach by antiperistaltic action.

December 15. *Diverticulum of the Œsophagus.*—Dr. Nikoladoni showed a diverticulum of the Œsophagus from a girl aged 8, who two years previously had her Œsophagus extensively corroded by swallowing some strong alkaline ley. The stricture that resulted was for a long time left without treatment, and led to the formation of a diverticulum in the upper third of the tube, which Dr. Nikoladoni could detect during life. As bougies, that were attempted to be passed through the stricture, always passed into the diverticulum, Dr. Nikoladoni determined on

laying the latter open. Having done so, he found on the anterior part a semilunar fold, which lay over the strictured portion of the œsophagus, making the passage of the instrument impossible. He stitched the mucous membrane of the diverticulum to the skin, and then introduced without difficulty an œsophageal sound, which was left in for the purpose of feeding. The child died of pneumonia at the end of eight days.

*Ophthalmoscopic Researches in the Insane.*—Dr. Klein gave the results of observations made on 134 insane patients. The most important of them were—1. The determination of the cloudiness of the retina, similar to that which occurs physiologically in old persons in many cases of progressive paralysis, and of a diseased state of the retinal arteries, consisting in thickening of their coats at various points; 2. The discovery of a point in the differential diagnosis between chronic alcoholism and many cases of progressive paralysis resembling it in their course: in the latter disease the power of vision is not especially affected, even though there be considerable disturbance in the retina (cloudiness, disease of the vessels, etc.), while in chronic alcoholism there are always more or less distinct disturbances of sight. —Dr. Leidesdorf said that Dr. Klein's observations were of great importance; especially, the discovery of a sign of differential diagnosis between chronic alcoholism and many forms of progressive paralysis.

December 22. *Primary Lupous Disease of the Conjunctiva.*—Dr. Neumann said that the phenomenon of lupous disease of the conjunctiva consisted at first in proliferations, bleeding on the slightest touch. After existing some time they produced shrinking of the cornea, through the formation of meshes and fibres of connective tissue in them. The morbid process commenced in the ocular as well as on the palpebral conjunctiva; it was more frequent on the lower eyelid than on the upper. The rarity of the disease was shown by the fact that Dr. Neumann has been able to find records of only four cases, published by Dr. Arit and Dr. Sattler. In a case recently observed by Dr. Neumann the patient was a girl who, in 1871, suffered from frequent stillitidium lacrymarum. Shortly afterwards swelling and redness of the eyelids, and fungous growth from the conjunctiva, set in. Dr. Rabl removed the fungosity and applied afterwards nitrate of silver. In spite of treatment, however, the destruction of the conjunctiva became very extensive. Three years later lupus appeared on the nose, and was cured by the application of nitrate of silver. The changes in the eye were the following. The upper eyelid was much swollen, and showed a cicatricial contraction; the eyelashes were wanting. There was symblepharon of both the upper and lower lids; and a deep depression was visible on the cornea. The patient had only a quantitative perception of light, and had some pain in moving the eyes. Dr. Neumann exhibited microscopic preparations of the disease taken from the conjunctiva. They showed a remarkable enlargement of the papillæ, epithelium proliferating on and between them, and the characteristic fine network and cellular infiltration, enormous vascularity, and finally, the presence of giant-cells in the lupous growths. The latter (giant-cells) have also been lately observed by Dr. Laskiewicz in inflammatory proliferations of the conjunctiva.—Dr. Hebra related two cases of lupus of the eyelids that had come under his observation, in which also there was lupus of the skin. In both cases a cure was effected by the application of solid nitrate of silver. In one the pa-

tient came again under notice on account of a return of the disease in the skin—the eye, after a lapse of ten years, remaining unaffected.

#### ACADEMY OF MEDICINE IN PARIS.

November 21. *Ulcerated Vaccinal Pustules.*—M. Alphonse Guérin showed a child vaccinated two days after birth, and having at the punctures three ulcerations, of which two ran together and formed a large deep ulcer with jagged edges. The brother of the child, sixteen months old, was vaccinated with the same vaccine, which took very well, and showed no abnormal appearances. Here was a strumous manifestation which might be easily confounded with vaccinal syphilis.—M. Gubler remarked that he had observed similar vaccinal ulcerations in children vaccinated at too early an age, or placed in bad hygienic conditions.

*Non-inoculability of Tubercle.*—M. Metzquer read a third memoir on the non-inoculability of tubercle, of which the summary is as follows. Different substances, amongst which tubercle is comprised, may by inoculation induce the formation of pulmonary nodules, which may be confounded with true tubercle. To arrive at a diagnosis, the animals experimented on must be kept alive. The pulmonary metastasis is affected by a process of embolism.

November 28. *Etiology and Prophylaxis of Typhoid Fever.*—M. Gueneau de Mussy read a memoir on the etiology and prophylaxis of typhoid fever. He contended that typhoid fever is eminently contagious, and that it is doubtful if, without contagion, it can develop itself. The dejections of the patients especially, as in cholera, serve as a vehicle for the contagion. This is a clear indication for the disinfection of the excreta, the soiled linen of the patients, and the cesspools. All the conditions which permit the emptying of night-soil into the sewers, and their communication with the open air, as it is seen in Paris, are a direct cause of the propagation of typhoid fever. It is necessary, as it is done in Brussels and in England, to trap the communications of the sewers with the houses and the streets; to scrupulously disinfect the dejecta, the patient's soiled linen, and the reservoirs for excreta. It would also be advisable to follow the laudable practice pursued in Brussels, of giving notice to the proper authority of every case of typhoid fever in the city, with the description of the house inhabited by the patient.

*Effects of Local Injury of the Brain.*—M. Proust related the following case. A youth, 19 years of age, received a blow from a sabre on the left parietal protuberance. Only after ten or twelve days he began to show weakness in the right arm; then right facial paralysis appeared, and soon afterwards he became aphasic and dull. After trephining where the injury occurred, immediate improvement followed, and ultimately complete recovery. The part of the brain injured must have been the ascending parietal convolution about half-way up; but probably consecutive inflammation spread to the ascending frontal, or further.

#### ACADEMY OF SCIENCES IN PARIS.

Nov. 13. *Carbolic Acid.*—M. J. Chéron claimed priority for the method of dressing wounds by the watery solution of picric (carbolic) acid (see LONDON



MEDICAL RECORD, Dec. 15, 1876, p. 564). M. Chéron reminded the Academy that he presented a paper on this subject to the Congress at Brussels in 1875.

November 20. *The Tympanum*.—M. Læwenberg presented a memoir on the exchange of gases in the drum of the ear, accompanied by physiological considerations and therapeutic applications. In cases of deafness from obstruction of the Eustachian tube, the quantity of gas contained in the drum of the ear diminishes. This diminution, generally attributed to absorption, appears rather to be due to diffusion by exchange with the gases of the blood. This fact suggested to the writer two new plans for preventing, or at least retarding the diminution of the air:—1. To insufflate air which has been alternately inspired and expired four or five times: this air, according to all foreknowledge, would remain inert in the presence of the gases of the blood; 2. Insufflation of hydrogen, a gas which resists the respiratory exchange of the lungs.

*Carbolised Medication*.—M. Déclat presented a note on the treatment of typhoid fever by carbolised parasiticide medication. This treatment should fulfil the following indications:—1. To prevent the elevation of the temperature by killing the ferment. 2. To abstract a certain quantity of heat by cold baths. 3. To introduce into the blood a substance which renders it more liquid (the carbolate of ammonia) to facilitate the contact of the antiferment with the ferment.

*Syphilis*.—M. J. Hermann maintained in a work on the nature of syphilis, that the iodides are specially intended to drive out the mercury from the animal economy.

*Fuchsine*.—MM. Foltz and E. Ritter communicated the results of fresh researches on the action of non-arsenical fuchsine introduced into the stomach and blood. The injection of fuchsine into the stomach of a dog resulted in the production of the colouring matter in the urine, and notable quantities of albumen. Injection into the veins likewise produced albuminuria and manifest lesions of the cortical substances of the kidneys. An injection of 16 *milligrammes* of pure fuchsine to each *kilogramme* of the weight of the body likewise produced general dropsy and great emaciation.

*Anæmia*.—M. Hayem presented a note on this subject. In curable anæmias, the number of blood-corpuscles is not considerably diminished, but it is necessary, by the help of iron, to increase their richness in colouring matter. In serious anæmias, the corpuscles are sometimes larger than in the healthy condition, but their number diminishes considerably. Therefore iron, which only serves to augment richness in hæmoglobin, cannot easily arrest the progress of the disease.

*On the Inhibitory Nerves*.—M. Onimus presented a memoir on the subject of the pneumogastric and inhibitory nerves, of which the conclusions are as follows. The nerves of vegetative life and the smooth muscular fibres, especially when they belong to a system which has rhythmic coordinated and automatic movements, do not answer to artificial excitations in the same manner as the spinal nerves. As soon as these excitations become too numerous and too rapid, they cease to provoke functional acts, and only become a cause of perturbation. The inhibitory phenomena obtained in these conditions are the result of this perturbation; and, furthermore, it seems to result from these experiments that so-called inhibitory nerves, on the contrary, range themselves under the general functional laws of all the nerve-filaments, and that their physiological excitation

always provokes the action of the organs to which they proceed.

*Origin of the Sensitive Nerves in the Bulb and Cord*.—In a memoir communicated by M. Vulpian, M. Pierret detailed the dissections which led him to the following conclusions as to the ganglionic termination of the afferent vertebral nerves. Admitting that previous researches have shown that their fibres do not end in the *caput cornu posterioris* ("substantia cinerea gelatinosa" of Rolando), and also that a large number ascend in the deep part of the lateral column, he believes he has shown that some, especially those of the dorsal lumbar (and sacral) nerves, end in the columns of Clarke (*i.e.*, the posterior vesicular columns, which lie on the inner aspect of the posterior cornu, between its cervix and the grey commissure). The fibres of the posterior cervical roots cannot end in the same way, since the tract of ganglion-cells just referred to were found by Dr. Lockhart Clarke to disappear in the cervical region. M. Pierret believes that they ascend deeply through the cervical cord to a nucleus of grey matter in the bulb, which lies close to the trigeminal nucleus, the rectiform ganglion. He concluded by referring to certain cases of *tabes dorsalis* in which he found the sclerosis (chronic interstitial myelitis, or grey induration) confined to the columns of Clarke.

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## REVIEWS.

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*Compendium of Histology: Twenty-four Lectures*. By HEINRICH FREY, Professor. Translated by GEORGE R. CUTTER, M.D. 8vo: 274 pp., with 208 woodcuts. London: Smith, Elder, and Co. 1876.

PROFESSOR FREY, whose name is still mentioned amongst the histological authorities of the present day, has by this recent work considerably increased his claims on the gratitude of students and practising physicians, bringing before them almost the whole mass of histological knowledge in a concise and intelligible form. This does not, however, in any way make us forget the goodly share which the translator, Dr. Cutter of New York, has in placing the Professor's work before the students of this country and America, where histological books are as much—we are not sure that they are not more—appreciated as even in Germany. The translator has taken conspicuously great pains in adhering as closely as possible to the German text, and has therefore placed the English student at the same advantage as the German, to whom these lectures are supposed to be delivered.

It is superfluous to prove that to write a compendium which is to contain all important facts of any scientific branch, arranged in an easily comprehensible order, and described in a light almost conversational tone, is a task of as great a difficulty as to write an exhaustive text-book; for to do the former well it not only requires the thorough knowledge and learning of the expert, but also that of the experienced teacher and conversant writer; and it seems to us, after perusal of the present volume, that it is a very near approach to such a compendium. When we say a very near approach, we mean that in its present form it is not what it might be, *viz.*, perfect, considering the author's relation to histology, to histological literature, and histological teaching; for there are certain parts in this book which, we think, will bear improvement, as we shall have opportunity to point out hereafter more in detail.

Save this, however, the material is exceedingly well arranged—a subject of great importance—copiously illustrated, and comprehensively described. The whole subject of general and special histology is described in twenty-four lectures, a task which naturally involves the necessity of leaving out all cumbersome detail, unimportant for the general student for whom the book is intended. As might be expected, the single tissues and those organs which, from their practical importance command greater attention, *e.g.* the liver, ovary, kidney, eye, etc., are treated with a considerable amount of detail.

The first Lecture introduces the student to the study of Protoplasm and the different kinds of Animal Cells. Amœba, amœboid cells, ovum, epithelial, and blood cells, connective tissue, endothelial cells, etc., are treated here in their general characters. This chapter is very lucid. There are only two things which deserve to be reconsidered. The chapter begins with an exposition of Bathybius, as the type of the all-powerful moving and living protoplasm. As the question of Bathybius now stands, we should think it better to leave this slippery substance untouched; at any rate it is not opportune to make the study of biology in general, and histology especially, stand on so unsettled and shaky a basis as Bathybius, whose place in nature is at present of a very doubtful character. It would have been no imperfection to have begun with “amœba,” which is well figured and described on pages 2 and 3. We hope therefore that in the second edition Professor Frey will “leave the dark deep, and turn to the sunny surface of the seas” (page 2) at once, and will commence with Protamœba.

Why should fig. 26 (tubular glands from the large intestine) be allowed to positively disfigure the assemblage of beautiful illustrations of this book?

The second Lecture treats of Blood, Lymph, and Chyle. The classification of tissues, as given in the introduction to this lecture, is, to our mind, not fortunate. Professor Frey says (p. 20) it “possesses, at least, the advantage of presenting the material in a more convenient form to the learner.” This is exactly what we think it does not do. The convenience in teaching that enamel-tissue, lens-tissue, and muscular tissue belong (group D) together, or that vessels, glandular tissue, and nerve-tissue, form one other group (group E), remains to be proved.

That the blood-corpuscles of the camel are represented as possessing a nucleus (fig. 29) is of course an oversight. Likewise, we suppose that fig. 31, in which lymph-cells are figured as if under the action of water (page 24), is an error, for the appearances represented are those produced by dilute acid.

Lecture third treats of Epidermis and Epithelium; Lectures four, five, and six, of Connective Tissue and kindred substances. These, as well as Lecture eight, on Muscular Tissue, especially the last, are very good, and contain everything a compendium can possibly hold. The next chapter, Lecture nine, on Blood-vessels, is also clear. It discusses all that is of importance to know of their structure and development. The tenth and eleventh Lectures, on the Lymphatics and the Lymphatic Glands and kindred structures, are unquestionably those which are treated best, as might be expected, on account of Professor Frey's numerous and valuable contributions to the knowledge of the lymphatic system. We should, however, point out that the author is fighting (p. 107) a lost battle; for such appears to be his persistency in questioning the correctness of the statement, according to which the lymphatic vessels originate in the spaces of the connective tissue, *i.e.*,

lymph-canal system, or interfascicular spaces or juice-clefts, or whatever they may be called.

The term septum for the connective tissue and trabeculæ of the lymphatic glands and spleen (pp. 108 and 119) is not quite appropriate.

Next in importance are Lectures twelve, thirteen, and fourteen, treating of Gland-tissue, the Digestive Apparatus with its Glands, the Pancreas, and Liver. The illustrations to these lectures are very numerous, and most of them are very good. The text contains all that is of importance to know. Amongst the illustrations, fig. 128, *i.e.*, a gastric gland, is not to be recommended as a typical representation of this structure; fig. 133, *i.e.*, acini of a serous gland from the vicinity of a circumvallate papilla of the tongue, is likewise not as it ought to be.

Lecture fifteen contains a description of the Lungs; and lecture sixteen, that of the Kidney, with the Urinary Passages. The chapter on the lung is very short; that of the kidney contains all the modern views of this organ except—and this must be a matter of surprise, considering that it is easily ascertained—that the first part of the ascending limb of Henle's loop is like the descending branch, a narrow tube lined by transparent flat epithelium. Frey, on the contrary, says (p. 166),—“Following the loop further, we arrive at the ascending wider side. The epithelium is again the old cloudy glandular variety of the convoluted uriniferous canals.” . . .

The Ovary and Testicle, as well as the development of spermatozoa, are discussed in Lectures seventeen and eighteen respectively; both are exceedingly clear. The name of La Valette St. George is conspicuous by its absence among the recent investigators into the development of spermatozoa.

The following two chapters, Lecture nineteen, on Nerve-tissue, and Lecture twenty, arrangement and termination of the Nerve-fibres, undoubtedly range amongst the best. The same cannot be said of Lecture twenty-one, on the Ganglia and Spinal Cord, and least of all of Lecture twenty-two, on the Medulla Oblongata and Brain. That on the spinal cord is incomplete in illustrations and description. Fig. 187, the only illustration of the spinal cord, is not a representation of a real spinal cord. The lecture on the brain has only one illustration, *i.e.*, a section through the cortex of the cerebellum, none of the cerebrum. The text of this lecture, we venture to think, is not of much value either to those who know the brain, or to those who do not know it.

The twenty-third Lecture is devoted to the Skin, the Gustatory, Olfactory, and Auditory Apparatus. The descriptions of the first three organs are very short; the last one, we believe, too fragmentary. Since when have the glandulæ sebacæ of the skin been called submucous follicles? (see p. 236).

Fig. 197, representing a perpendicular section through the cochlea of an embryonic calf, might, with great advantage, be replaced by one illustrating the adult cochlea, or some part of it, considering that there is only one other illustration, *i.e.*, of a part of the organ of Corti. The membrana reticularis—a name familiar to all—which the author mentions as lamina velamentosa of Deiters, is disposed of in this way (p. 245):—“It is impossible to describe here the marvellous reticular structure.” Seeing that the whole cochlea is described in less than two pages (to the tooth five pages are devoted), we do not wonder at the lecture on the auditory organ being thus concluded:—“Notwithstanding the infinite pains and labour bestowed on this subject, it still stands on a weak foundation.”



The last Lecture (twenty-four), devoted entirely to the Eye, is the longest, and justly so, considering the importance of this organ. This lecture is exceedingly well written, especially the part on the retina and the lymphatics of the eye; and we only regret that not more is said and figured about the lens. The first illustration of this lecture, fig. 199, a diagram showing the general morphology of the eyeball, should find no place in a good anatomical book. It might be suitably replaced by a diagram illustrating the arrangement of the blood-vessels of the eyeball, no doubt one of the most important parts; all that is said (p. 260) is:—"It is impossible for us to enter into the exceedingly complicated arrangement of the blood-vessels of the eyeball."

We finish here what we have to say with regard to the author's part. We repeat that the book will prove very useful, and is, except the chapter on the spinal cord, brain, and auditory organs, exceedingly good, considering that it is to be "a short compend of the most essential facts for students and practising physicians." As regards the translator, we have little to add to what we already said. It is shortly this: he has followed with scrupulous care the German text, and in many instances has rendered it very accurately; in a few instances, however, the translation is not intelligible. The following require to be altered, in order to be better understood.

Page 36.—"Many mucous membranes present material, and sometimes very considerable layers of pavement epithelium." Page 34.—"The cavernous (!) system of the spinal cord and brain." Page 35.—"When the ciliary motion is still in full vital energy, and several vibrations then take place in a second, the human eye is powerless." Page 43.—"From the similarity of the power of refraction is caused the phantasm of homogeneity; the cartilage-cell lies in a chasm." Page 94.—"The inner vascular membrane" is not, as is intended, "innere Gefäßhaut"; i.e., the inner membrane lining the vessel, but means the inner membrane *provided with vessels*, which is of course absurd.

What is the exact meaning of the second of these two sentences (p. 123)? "Lymphatic passages occur with certainty in the capsular and trabecular systems of the spleen. As to what is thought to have been met with in the true lymphoid tissue, it stands on a weak foundation."

As examples of too literal translation, we quote the following.

On page 37; "with the membrana propria and the secretory cells *we are therefore finished*" . . . [*wir sind . . . fertig*]."

Next we find: "the art and manner," for "die Art und Weise." Page 134: "Wealth" of lymphatics, etc., occurs repeatedly for "Reichthum" an Lymphgefäßen, etc. Page 162: "protoplasmless." Page 173: "The later to-be-mentioned cavernous tissue." Page 191: "We have therefore a system of spaces and cavities, reminding one of a *bathing* sponge, lined with vascular cells". . . Page 220: "Our supporting substance *comes forward*" . . . [*Kommt vor, i.e., is found*]. Page 229: "As with the subsequently-to-be-mentioned brain." Page 228: "They remind one of the subsequently-to-be-described elements."

But all this can be easily corrected in a second edition. We must not omit to pay a well deserved tribute to the publishers, for the admirable way in which the woodcuts are reproduced in this volume.

E. KLEIN, M.D.

*The Functions of the Brain.* By DAVID FERRIER, M.D., F.R.S., Assistant-Physician to King's College Hospital; Professor of Forensic Medicine in King's College. London: Smith, Elder, & Co., 1876.

The author remarks that we are still on the threshold of the inquiry, and with justice too. The discovery of the electric excitability of the cortex of the brain by Fritsch and Hitzig is of so recent a date, that it may seem to many that the time has not yet arrived for coming to anything like satisfactory conclusions regarding the functions of so complex an organ as the brain. Still the author has made the attempt, and he is the more entitled to do so, since he of all physiologists in Britain has laboured at this obscure department of physiology. Indeed, early in his career, Dr. Ferrier received a gold medal from the University of Edinburgh for his Thesis on the Functions of the Corpora Quadrigemina.

A short sketch of the anatomy and histology of the brain and spinal cord is given in the first chapter. The nature of reflex action and the functions of the spinal cord and the medulla are then shortly described. The descriptions of the effects of removal of the hemispheres in fishes, frogs, birds, and mammals are excellent and concise. The fundamental fact conclusively demonstrated by such experiments seems to be, "that in the absence of the cerebral hemispheres the lower centres, of themselves, are incapable of originating active manifestations of any kind. The lower ganglia appear to be centres of immediate responsive action only, as contra-distinguished from the mediate or self-conditioned activity which the hemispheres alone possess."

The different apparatus on which depends the mechanism of equilibration are treated fully. The view that locomotor ataxy depends on loss of the muscular sense in particular is rejected. In addition to the tactile, visual, and labyrinthine impressions which are concerned in equilibration, it is suggested that the viscera may also have some relation to this act.

With regard to the function of the corpora quadrigemina or optic lobes, it is remarked that "the facts of anatomy and those of physiological experiment mutually support the view that the corpora quadrigemina, though not the centres of conscious vision, are centres of co-ordination of retinal impressions with special motor reactions."

It does indeed seem that the methods of experimentation are somewhat crude. Reference is often made to the method originally adopted by Flourens, viz., removal of slices from different portions of the brain, as an unsatisfactory procedure; but in some respects the pushing of a wire cautery through the superficial parts to reach those more deeply situated, is indeed rough treatment for such an organ as the brain. The anterior tubercles of the corpora quadrigemina were reached in this way in a monkey; but the experiment would have been of much greater value had the animal been allowed to live more than fifteen hours after the operation. A very marked difference between the optic lobes and the cerebral hemispheres is the fact that the former, unlike the latter, are susceptible of irritation by various kinds of stimuli, mechanical, chemical, or electrical. The functions of the cerebellum and the effects of its electrical stimulation are discussed.

We now come to what is really the chief part of the book, the functions of the cerebral hemispheres. The destruction of these organs by annihilating sen-

sation, ideation, volition, and intelligence in general reduces the animal to the condition of a complex machine, the activity of which is the immediate or direct result of certain forms of "entoperipheral" or "epiperipheral" stimulation. In the historical account of the methods and results of the various experimenters, we are glad to observe that Dr. Ferrier gives Fritsch and Hitzig due credit for their discovery of the so-called electrical excitability of the cortical substance of the hemispheres, and that definite muscular contractions were associated with irritation of certain circumscribed areas of the brain. Fritsch and Hitzig used and prefer the galvanic current; while Dr. Ferrier advocates the use of Faradic electricity for stimulating the brain. It might have been expected that, just as in other conductors, there would be extrapolar conduction in the brain; and this has been proved to be the case by Dupuy, and by Carville and Duret, though Dr. Ferrier is not at all inclined to admit the conclusion drawn by Dupuy from this fact, viz., that to this conduction to the basal ganglia the movements are due. It certainly is a well ascertained fact, that the electrical stimulation of certain areas of the surface of the brain is always followed by the same movement, while stimulation of a neighbouring convolution may produce an entirely different movement, or none at all. On this has been founded the doctrine of so-called "centres." The existence of these centres is doubted by many, and the effects were often attributed to conduction of the electricity to the basal ganglia; but such a view does not well accord with the fact that "stimulation of the island of Reil, which immediately overlies the corpus striatum, causes no movements; while the more distant parietal regions at the same time react, actively and definitely, to the same stimulus." Many other facts are, however, cited by Dr. Ferrier against the effects being due to conduction. There is another point in this connection. A strength of current sufficient to excite the most violent tetanic spasms, if applied to a motor nerve, has no effect on the cerebral hemispheres. The intensity of current required, therefore, is considerable. The most remarkable fact in the whole matter seems to be, that the hemispheres are only excitable for an electrical stimulus. The animals experimented on by Dr. Ferrier included monkeys, dogs, jackals, cats, rabbits, rats, pigeons, frogs, and fishes.

Irritation of the corpus striatum causes general muscular contraction on the opposite side of the body, while the same strength of current applied to the optic thalami gave a negative result.

Localised destruction of special areas, usually by means of the actual cautery, but sometimes with the knife, was also had recourse to, and this specially in monkeys, which were found to be well suited for the purpose. Destruction of one angular gyrus causes complete blindness in the opposite eye. From the effects produced by destruction of various areas, an attempt is made to localise various sensory centres, the auditory centre in the superior temporo-sphenoidal convolution, the tactile in the hippocampal region, and those of smell and taste in the subiculum cornu Ammonis, and its neighbourhood. Experiment has as yet afforded no clue to the function of the occipital lobes, and at present any statement can be only a conjecture.

With regard to the motor centres, it is remarked that in the rabbit the destruction of the corpora striata on both sides produces much less effect than in the dog, for the rabbit can still maintain its upright position, though the fore legs are weak, and con-

tinually tend to give way and double up. It would seem that the centre for the co-ordination of the movements of the fore and hind limbs in the rabbit lies further down in the cord; and in fact some researches of Owsjannikoff go far to confirm this view. In order that quite precise results may be obtained, it will be necessary to limit more accurately by some form of graduated cutting instrument, such as Ludwig, Dittmar, Owsjannikoff, and Woroschiloff have used for the cord; and more careful microscopic examination of the injured parts ought to be made.

The chapter on the hemispheres considered psychologically is well worthy of perusal.

This work of Dr. Ferrier is eminently suggestive, and gives strong evidence of careful and laborious research, and great critical acumen. It is specially valuable from its containing the author's own original researches; and there will be found a most useful record of facts for future comparison. From it physiologists and psychologists, entertaining even widely different opinions, may easily find data to support their theory of cerebration. It is a book deserving of the most careful and attentive study. Not the least valuable part of it is the pithy and concise *résumé* of the general physiology of the lower segments of the cerebro-spinal axis.

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*Nutrition in Health and Disease.* By J. HENRY BENNET, M.D. pp. 248. London: Churchill, 1876.

This is the second edition of a work which first came out in 1858, and which has long been out of print. We may congratulate the author in having taken up his old work and given it a modern dress. The work itself is well worth the trouble of preparing a second edition. Dr. Bennet has sound views on the subject of nutrition, and is sufficiently acquainted with more recent physiological work to give a fairly accurate representation of the present aspect of the subject. Dr. Bennet's experience amongst invalids at Mentone gives a special value to what he has to say about defective nutrition and its relations to conditions of impaired health. He points out how in some organisms a large portion of the food is wasted, and consequently how they require apparently unnecessarily large quantities of food. In others, again, the assimilative organs are of such order that but small quantities of food can be taken at one time, and so the meals have to occur at brief intervals. The chief test of imperfect digestion is, according to Dr. Bennet, a condition of the urine where deposits are freely thrown down in cooling, without the urine being necessarily turbid. Urates are the evidence of imperfect assimilation and oxidation, and great pains are to be taken to discover which is the most important factor in each case. Urine should be passed two hours after a meal, and then the fluid accumulating after that time should be used for examination. But this time is to be modified according to the quick or slow digestion of different organisms. His remarks upon the dietary of chronic invalids are full of mature wisdom, and show that observation and reading have gone hand-in-hand, mutually aiding each other. They must be read in their entirety, and cannot be given at all fairly in a compressed form. His remarks on alcohol are sound and opportune. He says, "Perhaps the greatest real advantage which a person debilitated by defective digestion and nutrition derives from alcoholic beverages is, that they assist in the generation of heat. The economy will burn alcohol when it can with difficulty burn imperfectly formed



chyle, or when chyle is not generated in sufficient quantity to supply the demand for organic fuel." This is a very fair and explicit statement. Dr. Bennet is not, however, an indiscriminating advocate of alcohol, and points out with great perspicuity the circumstances where the dyspeptic should be a water-drinker. As to the mechanical treatment of dyspepsia, it is very satisfactory and withal discriminating. The concluding remarks on purgatives are to the point. After indicating the circumstances which call for them, the contra-indications are given. Voluminous motions are not necessary to health. "Many a hypochondriac half destroys himself by purgatives under the influence of this egregious mistake. Many a doting mother, imbued with this fatal error, does her best utterly to destroy the digestive system of her children." Dr. Bennet's work must be read to be thoroughly appreciated.

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Étude sur les différents traitements des abcès ossifluents externes suivie de l'exposition d'un procédé particulier de la méthode des caustiques appliquée aux abcès ossifluents externes volumineux, par Henri Fourestié, in-8 de 84 pages, chez V. A. Delahaye.

### MISCELLANY.

THE ELECTRICITY OF LEAVES.—At a recent meeting of the Royal Society, Dr. Burdon Sanderson read a paper on the mechanical effects and the electrical disturbance consequent on excitation of the leaf of *Dionaea muscipula*. The mechanism by which the leaf of *Dionaea* closes has already been studied by Mr. Darwin, but the experiments now made add much to our knowledge of the nature of the excitatory process in plants and animals. The first set of experiments were to determine the time that elapsed between touching one of the sensitive hairs and the first perceptible motion. The touches were given at intervals of two minutes. The first half-dozen produced no mechanical effect. Then 25 successive touches produced effects which variously took 7, 5, and 3 seconds before they caused actual motion. The 26th touch produced motion in 2.2 seconds, and at the 27th the leaf closed. It was found by attaching a one-gramme weight that with each touch after closing the leaf clenched tighter. With regard to the electrical condition of the leaf, it is found that the external surface is positive to the internal. The electrical disturbance is strictly limited to the surface of the leaf, and does not extend to the petiole; the petiole simply serves as an ordinary moist conductor. Experiments were also made to ascertain the centre of greatest electrical intensity in the leaf, and tables giving the results of many experiments have been drawn up. In animals it has long been known that only the nervous and muscular tissues are electromotive, and it would appear that in plants it is the leaf alone that is electromotive. It was found by shifting the needle-points to different parts of the leaf, that when one part was exhausted and would produce no effects, other parts would, thus indicating that the excitability of the plant is a property possessed independently by the protoplasm of every cell in the excitable area. Experiments

have also been made as to the time that elapses between touching a hair and the manifestation of electric disturbance, and it is found to be from one-sixth to one-eighth of a second. Similar experiments on other plants are promised.

**MEDICINE AMONG THE HEBREWS.**—We had lately occasion to seek some information on this subject from Dr. Kalisch. Out of the abundance of his learning and liberal kindness he promptly furnished us with a notice so valuable for its succinct fulness, that we put it here on record, as an interesting contribution to medical history. Medical art was, among the Hebrews, practised from early times by a special profession—the *Kopheim*, and is already mentioned in the ancient Book of the Covenant, which embodies the oldest fundamental laws (Exod. xxi, 19). They may possibly have derived much of their knowledge from the Egyptians, famous for their discovery of remedies from remote ages (Hom., *Od.*, iv, 229-232), and for their medical skill generally (Herod., ii, 84; iii, 1, etc.); “embalming physicians” are mentioned in Genesis i, 2; and during their sojourn in Egypt they had Hebrew midwives (Exod. i, 15-20). Their art seems, for the most part, to have been limited to surgery and the cure of external injuries (comp. Isai. i, 6; Ezek. xxx, 21; 2 Kings viii, 29, ix, 15); but the physicians, many of whom belonged to the prophetic order (2 Kings iv, 33-36, v, 10, viii, 7, xx, 7; Isai. xxxviii, 21), enjoyed great respect and confidence, and were very generally employed, especially after the time of the exile, when even the smaller towns had their medical practitioners (Jerem. viii, 22; Sirach xxxviii, 1-15, a remarkable passage; Josep., *Vita*, 72, etc.), though the priestly book of Chronicles severely blames King Asa for “not having consulted God, but the physicians” (2 Chron. xvi, 12). In later times, the priests and Levites, who officiated barefooted at the Temple, had a special physician (“*medicus viscerum*”) to cure the colds to which they were liable; the Essenes particularly were celebrated for their knowledge of medicine and the natural sciences (Joseph., *Bell. Jud.*, ii, viii, 6). The remedies used by the ancient Hebrews were chiefly ointments (especially of balsam, Jerem. viii, 22, xlv, 11, li, 8), leaves of trees (Ezek. xlvii, 12), cataplasms (especially of figs, 2 Kings xx, 7), mineral baths (Joseph., *Antiq.*, xvii, vi, 5; *Vita*, 16), river-baths (2 Kings, v, 10), oil-baths (Joseph., *Bell. Jud.*, i, xxxiii, 5), animal warmth for restoring the circulation (1 Kings i, 2-4; 2 Kings iv, 34, 35). Music was employed for dispelling melancholy (1 Sam. xvi, 16); fish-gall put on the eye, to cure blindness (Tobit vi, 4). Of inward medicines, honey only is mentioned in the Old Testament (Prov. xvi, 24); several others occur in the Mishna and Talmud, where also many surgical manipulations are alluded to, even the insertion of artificial teeth (Mishn., *Shabb.*, vi, 5). As a kind of sanitary police, the Law (*i.e.*, the Levitical Law, which is of very late origin) appointed the priests, not so much to practise, but to exercise the inspection and control over the sick and persons suspected of some endemic malady, especially leprosy, and it gives, in this respect, directions which seem to prove very careful observation (Levit. xii, xiii, xv). The Laws of Purification had, of course, an important sanitary influence (Levit. xii, etc.) The Dietary Laws also (Levit. xi, etc.) were partially, though by no means exclusively, suggested by sanitary considerations.—*British Medical Journal*.

**DR. CARPENTER ON SPIRITUALISM.**—Dr. Carpenter, in his second lecture on spiritualism in the theatre of the London Institution, referred to the inherent possibility of things as a necessary element to guide us to belief or disbelief, and gave an account of what had been asserted with regard to a telegraph by means of snails. It had been stated that two snails had been placed in contact with each other in Paris. Then one of them was taken to New York, and, on an appointed day and hour, the snail in Paris being placed upon a given letter of the alphabet, that in New York at once crawled to the corresponding letter. Was there, he asked, any possibility of believing such a statement. Nevertheless, it was published in *Chambers's*

*Journal*, with a certain semblance of credence. Some of the statements made with regard to the phenomena were of improbability so strong, that nothing could remove it. They were not only beyond our ordinary experience, but they were opposed to all our experience, and nothing but the most cogent testimony could be received. The lecturer gave then accounts of cases in which he had found that the application of tests appeared to prevent the occurrence of the phenomena. One class of observers was particularly dangerous to trust to. He was obliged to say that females were especially prone to believe in the marvellous, and he appealed to any medical man for confirmation of the statement. In this inquiry nobody was to be trusted. Almost everything in it reported as fact must be the result either of deception or self-deception, and there was an immense difference between the fact itself and the observer's idea of the fact. Some twenty-seven or thirty years ago he had delivered a lecture on the *ideo motor* principle of action; and, with regard to the divining-rod, he might tell them that twenty-five years since it had been most fully investigated and reported upon by two French *savans*. Table-moving began to be talked of shortly after he had delivered the lecture above-mentioned, and Faraday investigated it, and proved that it was due to unconscious muscular action. The lecturer recommended anyone who was disposed to investigate these subjects to possess themselves of a little handbook which he showed, written by the late Sir John Forbes, and entitled *Lessons of Reason; being Illustrations of Mesmerism*, and giving an account of investigations carried on by him. He (the lecturer) had himself assisted Sir John, then Dr. Forbes, in these investigations, and they had gone into the higher phenomena of clairvoyance as well as the investigation of disease by that means. They tested three very celebrated clairvoyants—Alexis and Adolphe and George Bogle—who were greatly talked of at that time. Under the test neither Alexis nor Adolphe gave any satisfactory results, and Bogle was detected in imposture. The investigation of these matters must be conducted by persons well trained for the duty, and by those who had no bias in favour of the truth of the phenomena. The lecturer added that when spiritual raps were first known, about 1846, they were investigated by medical men in New York, who came to the conclusion that they were produced either on or inside the persons of the young ladies in whose presence they occurred. He thought they must be produced inside, for they were transmitted from them into the table, the door, or the piano, when the hand touched it. Dr. Austin Flint had brought forward patients whom he had taught to produce these raps in the knee- or ankle-joints, and an Italian professor had exhibited himself in Paris to the *savans* there, having learned how to produce them. He (Dr. Carpenter) did not say that all raps were produced in this way; he only said that it had been proved they could be so produced. In conclusion, the lecturer remarked that these investigations were calculated to produce insanity, because insanity was nothing more than the possession of a fixed idea, which tintured everything with which we had to deal.

**THE REPETITION OF PRESCRIPTIONS IN SAXONY.**—A decree has recently been issued by the Minister of the Interior for Saxony, abolishing former regulations as to the repetition of physicians' prescriptions in that country, and replacing them by more inclusive rules. With respect to medicines for internal administration, pharmacists are now forbidden to repeat, without a special order from the original prescriber or another qualified physician or surgeon, any prescription, ordering, in any dose whatever, any of the substances included in Table B (*medicamenta cautissimè asservanda*) of the German *Pharmacopœia*. This table includes arsenic and its preparations, mercurial compounds, phosphorus, strychnine, atropine, coniine, veratrine, and to these are also now added digitalin and chloroform (whether for inhalation or internal administration). The same rule applies to the articles in Table C (*medicamenta cautè servanda*) if the dose ordered exceed by one-fifth the official maximum dose. Chloral hydrate is not to be repeated when the maximum dose of 4.0 grains is exceeded; or ergot



if the dose exceed 6 grains, or extractum scalis if the dose exceed 0.3 grain. Neither are the prescriptions of homœopathic physicians up to and inclusive of the third dilution to be repeated. As to medicines for external use dispensers are prohibited from repeating prescriptions containing any dose whatever of an article in Table B, before referred to, with the exception of red oxide of mercury, white precipitate, and veratrine; or a prescription for subcutaneous injection of a solution of a substance in Table B or Table C.

**RUSSIAN ARMY MEDICAL SERVICE.**—The Russian *Medical Gazette* states that on the 1st of last January the Russian army possessed 2,102 surgeons, 250 apothecaries, 6,887 assistant-surgeons, and 173 veterinary surgeons. This gives one surgeon for every 407 men, one apothecary for every 3,454 men, and one assistant-surgeon for every 161 men.

**SOLDIERS' FOOD.**—Among the recent experiments that have been made in Bavaria relating to the preservation of animal food, the military authorities have derived great satisfaction from those made on the desiccation of eggs. These, it appears, can be perfectly preserved in a dried state, retaining all their nutritive qualities in a much smaller space, admitting of ready transport, and furnishing an excellent addition to the soldier's food during a campaign.

THE *Berliner Klinische Wochenschrift* lately contained the first of a series of contributions from the Academical Hospital in Yedo. The article was on the treatment of various forms of dilatation of the stomach by the induction-current, and was written by Assistant-Physicians G. Oka and J. Harada, whose names indicate them to be Japanese.

**OUR OPIUM TRADE.**—The most recent reports of Her Majesty's Consuls in China afford important evidence that the growth of native opium in China is largely increasing, and that indeed it is now entering largely into competition with the opium of India, and materially affects the imports. It is growing so rapidly that it threatens to become a serious rival to this mainstay of the Indian budget. Mr. Robertson of Canton reports: "The breadth of land under poppy cultivation has increased year by year, and the produce has unquestionably checked the increase of the Indian drug. The province of Szechuen is where it is chiefly grown, but in Shantung, Chili, Hupeh, etc., there is an increasing production, notwithstanding the occasional proclamations fulminated against it, and of which little notice is taken. Mr. Consul Lay, Consul at Chefoo, referring to the decrease in the import of opium to that port during 1875, says: 'It is becoming more manifest, year by year, that the cultivation of native opium is affecting the market even in this province, though, owing to the illicit character of the trade, it is extremely difficult to obtain reliable statistics. Merchants are either unable or unwilling to give definite information. There is no doubt, however, about this, that in Chefoo, and in every large town in the province, native-grown opium can be freely bought in the market. I am informed, on what I believe to be reliable authority, that about 200 piculs, valued at £12,000, have been sold in this town during the past year; and if that is so in a place the most remote from the producing districts, it is easy to see that the consumption for the whole province must, on the lowest calculation, be a very considerable amount.' At Newchang, there is a notable decrease in the import of opium, the quantity in 1875 being only 840 piculs against 1,265 piculs in 1874. Mr. Consul Adkins says: 'This condition of the opium trade is, of course, due to the fact that the native-grown drug is fast taking the place of the Indian.' All other evidence from the consular reports is of like import.

**FIFTEEN HUNDRED YEARS OF SLEEP.**—The mines of Laurium, which gave rise recently to such lively diplomatic discussion, are generally known to be largely encumbered with scoriæ, proceeding from the working of the ancient Greeks, but still containing enough of silver to repay extraction by the improved modern methods. Professor

Hendreich relates, according to *L'Union Médicale*, that under these scoriæ, for at least fifteen hundred years, has slept the seed of a poppy of the species *Glaucium*. After the refuse had been removed to the furnaces, from the whole space which they had covered have sprung up and flowered the pretty yellow corollas of this flower, which was unknown to modern science, but is described in Pliny and Dioscorides. This flower had disappeared for fifteen to twenty centuries, and its reproduction at this interval is a fact parallel to the fertility of the famous "mummy wheat".

**DEATHS FROM VIPER-BITES.**—M. Viand-Grand-Maraix has collected the notes of three hundred and seventy cases of viper-bites which have occurred during the last twenty years in the departments of the Loire-Inférieure and of La Vendée. Fifty-three of these cases proved fatal. Many distinguished scientists and physicians maintain that the bite of the viper is not fatal to man, but these figures show the danger of allowing such a theory to be propagated.

**THE CHARITÉ HOSPITAL IN BERLIN.**—The hundred and fiftieth anniversary of this hospital was celebrated on January 4th. The original object of this institution was not at all that of a hospital in its present sense. It was at first designed for a plague hospital; but, being soon found unnecessary for this purpose, was afterwards applied to various objects, until it became a hospital for the sick and a seat of clinical teaching. The first occasion of the erection of the buildings which were at a later period named "Charité", was the presence of an epidemic of plague in 1709 and 1710. Berlin, however, remained free; and the buildings had therefore been applied to another purpose. On January 1st, 1727, the institution was opened as a lazarette, and received from King Frederick William I the name of "Charité", which it has since retained. From that time, it has been regularly used as a government institution. Under Frederick William I and Frederick II the Charité underwent very remarkable changes. Up to 1748, the property of the Charité was administered in connection with the other funds for the relief of the poor: but in this year it was separated, and since then the Charité has been quite a separate institution. On August 3rd, the foundation-stone of a new house was laid, as the hitherto existing building had long become insufficient and dilapidated. In 1785 and 1786, however, only the present north-west wing was built; in 1789, the building of a second wing was commenced, and was completed in 1797. Finally, the building of the principal and central parts of the hospital was proceeded with, and a church was built in the north-west angle; and, in 1800, the Charité Hospital assumed its present form, with the exception of some subsequent internal changes and additions to the building. By a regulation of September 7th, 1830, a "Royal Curatorship of Hospital Affairs", under the immediate direction of the ministry of public instruction, was instituted for the purpose of supervising and managing the affairs of the hospital. In 1835, by a cabinet order, a member of the Commission of the Poor (*Armendirection*) was added to the curators to represent the interests of the town; and at a later date an official was stationed in the Charité on the part of the magistrates, in order to superintend the expenditure, accounts, etc. By a royal cabinet order of April 11th, 1846, the curatorship was superseded, and the institution was placed under the direct control of the ministry; and Major Hirsch and Superintending Inspector Esse were appointed to the management. In the beginning of 1850, it was placed under the management of a surgeon—Medical Councillor von Horn, with Inspector Esse; it being thought advisable that an actual and independent representation of the medical element should be introduced, without interfering with the action and independence of the administrative officer. Von Horn died in 1871; and Esse remained sole director till April 1st, 1873. On that day, the direction of the Charité was undertaken by General-Surgeon Mullhausen as medical director, and State-Councillor Spinola as administrative director; both these are now in office.

# The London Medical Record.

## ON MILIARY TUBERCULOSIS OF THE PHARYNX.

BY DR. B. FRÄNKEL, OF BERLIN.

(Concluded from page 3.)

WE now turn to the symptomatology of the disease, and first to the subjective symptoms. All the patients complained of pain in the throat. It was this which first made them aware of their malady; and up to the time of their death it only too actively occupied their attention. The pains were produced with each act of deglutition, but they were also spontaneous, and were described sometimes as pressing, sometimes as stabbing or grating. The violence of the pains differed much in individual cases, as is usually the case in a special degree in disease of the pharynx. Some patients, however, complained of extremely severe pain.

It was several times stated by the patients that during deglutition they felt very severe stabbing pain in the ear. This is a symptom which frequently appears in affections of the pharynx and of the epiglottis, especially when there is ulceration; and I have also observed it as a temporary sequel of the injection of iodine into the submucous tissue of the tonsils. The question arises, how are these pains in the ear to be explained? Traube, in his work on the Symptoms of the Diseases of the Respiratory Organs (Berlin, 1867), says that the pains in the ear are perhaps dependent on ulcers in the neighbourhood of the orifice of the Eustachian tube. This, however, is not the case; for, in my patients, rhinoscopic examination always showed the pharyngeal orifice of the Eustachian tube to be intact. Nor did a thorough examination of the ear give any reason for assuming the existence of disease of that organ. I believe that we have here entirely to deal with perverted sensations, communicated through Jacobson's and the glosso-pharyngeal nerves. Aural surgeons have long been acquainted with the converse condition, viz., that, in operations on the tympanum, pains produced in the middle ear are referred to the pharynx; and therefore I think that the sensation here is entirely a perverted one, the pains arising in the pharynx being referred by the patient to the ear.

In all the patients there was observed more or less dysphagia, certainly dependent in part on the pain. The patients dread swallowing, and avoid it as much as possible, so as to avoid the pain produced by it. But besides this, swallowing is impeded; and one is the more readily led to assume the presence of serous infiltration, and even of parenchymatous disease of the muscles, that microscopic examination has shown infiltration of small cells among the muscular layers, along with turbid swelling. The propulsion of the morsel of food through the pharynx into the œsophagus is attended with trouble; solid food can for the most part, as soon as the ulcers have become even moderately extensive, no longer be swallowed; and fluids regurgitate frequently through the mouth or nose. Isambert alleges that in this disease the difficulty of deglutition is greater than in

any other affection. Although I cannot assert so much as this, the impediment to swallowing was in several cases so considerable, that the question arose whether nourishment should be introduced artificially. But the impediment to deglutition was always one of the circumstances which went to account for the rapidly increasing emaciation of the patients.

Among the objective symptoms, the ulcers come into the foreground. These present throughout the tuberculous character. They generally begin in the lateral walls of the pharynx, and thence spread to the roof of the mouth and the posterior wall of the fauces, as well as the velum palati; appearing to follow a course transverse to rather than in the line of the axis of the body. They appeared not to attack the œsophagus; at least, in the cases on which necropsies were made they were marked off by a defined line. In one case (No. 4) they extended into the nasal portion of the pharynx and of the velum. In the later stages they appeared in sharp contrast with the adjacent healthy mucous membrane, rendered pale by anæmia. All the stages of the development of the ulcers could generally be followed in the same individual, from grey isolated or confluent nodules to the destruction of the new formation and final caseous ulceration; but, as has already been said, this had no tendency in the pharynx to spread deeply. The ulcers were covered with a dirty cheesy purulent mass, adhering rather firmly to the base. In one case only (No. 6) was there any remarkable disposition to hæmorrhage; this case was complicated with mercurial stomatitis.

The uvula deserves a special notice. If it remained free from tuberculosis, it appeared atrophied, small, like a knob. When it was attacked with the disease, it was enlarged to the thickness of a thumb, with hard nodules, some as large as lentil-seeds; a condition which led Isambert to compare the pharynx with its arch and the thick knobby uvula in the midst to a stalactitic cavern.

In some parts, there is a disposition to hypertrophy along with the destruction of tissue. In the vicinity of the tonsils especially polypoid excrescences form, projecting beyond the ulcerated base.

As inoculation-experiments have shown that grey nodules are readily developed in the neighbourhood of a cheesy deposit, the presence of grey nodules in the neighbourhood of an ulcer is no longer a direct evidence of the origin of the ulcer from the breaking down of grey nodules. It is more likely that an ulcer acts as a caseous focus, and that the development of grey nodules in its vicinity is a secondary phenomenon. In my sixth case, it was possible to observe, in a hitherto sound portion of the velum palati, grey nodules to spring up and become broken down, and ulcers to be developed in their places. The rapidity with which the process went on in this case can scarcely be the rule; but I believe that I observed in this case, which came under observation earlier than usual, that the grey nodules were primary, and that the ulcers were a secondary result of their breaking up. The possibility of making observations easily and without impediment in this region is sufficient cause to me for recognising the pathological value of miliary tubercle of the larynx. If we except the skin, there is no other part of the body where observations of this kind can be so easily carried out. On the tongue the papillæ are in the way; the larynx can only be seen with the laryngoscope; but in the pharynx, and especially on the



velum palati, these processes go on in a relatively protected part before our eyes, and are accessible to direct observation. Hence, with the help of lenses fastened to a handle, which can easily be brought near the part affected, we can employ sufficiently high magnifying powers to easily detect and observe submiliary nodules. I have no doubt that the pharynx is a field which will afford still more abundant fruit in the study of the pathology of tubercle.

As regards complications, in many cases the ulcers spread to the root of the tongue, and on the dorsum of the organ. Tuberculous ulcers were even observed on the lips and on the anterior part of the dorsum of the tongue. In connection with this, however, I have to remark that in my first case, as in one related by Isambert, the ulcerations on the tongue preceded the pharyngeal tuberculosis.

A phenomenon of much interest in all the cases hitherto observed is the passage of the tuberculosis from the pharynx to the larynx. In my second case, the larynx was quite intact at the commencement of the observation. While the patient was under notice, oedema of the glottis (which appears to be rarely absent) set in for the first time; and then, as the swelling went down, tuberculous ulceration appeared on the epiglottis, and other parts of the larynx. From the description which the other patients gave of their symptoms, it appears that in them the affection of the larynx was secondary; it does not, however, follow that the converse might not occur, and tuberculous ulcers spread from the larynx to the pharynx. When once the larynx was attacked, rapidly spreading destruction, especially of the epiglottis, took place. Here the tuberculous ulcer acted like a rodent ulcer, and destroyed not only the mucous membrane, but the perichondrium, and even the cartilage. In some cases, all that remained of the free portion of the epiglottis was a small shapeless piece, which, viewed from above, presented an ulcerated surface lying horizontally at the level of the insertion of the middle glosso-epiglottic ligament. During life, this remnant of the free portion of the epiglottis appeared smaller than it really was, in consequence of the surrounding parts being infiltrated. In none of my cases were the ulcers of the larynx accompanied with perichondritis; and I must mention that in none of my patients was death the direct result of implication of the larynx. In the sixth case the vocal cords were preserved up to death, and were found healthy at the necropsy. It thus appears that tuberculosis of the larynx, supervening on pharyngeal tubercle, runs its course especially as tuberculosis of the upper division of the larynx.

The remaining complications—the regularly appearing glandular swellings in the neck and in distant parts, the concomitant or preceding bronchopneumonia and miliary tuberculosis of the lungs, the ulcers on the intestinal canal, etc., I have already mentioned; and I pass them by, as they present nothing that calls for special remark.

I come now to the fever which was present in the above-described cases. It is, in fact, the fever of extensive miliary tuberculosis, and shows an unusually irregular course (temperature curves were shown). In one case (No. 4) the curve in the first week resembled that of typhus and afterwards that of hectic; then evening temperatures up to 40 cent. (104 Fahr.) with high morning temperatures, continued up to the end of life, in spite of the abundant use of quinine. In the sixth case there was a tem-

perature of continued fever, generally ranging between 38 and 39 cent. (100.4 and 101.2 Fahr.), but never reaching 40; a curve which is observed in most cases of miliary tuberculosis. It then rose suddenly to 41.7 (107.06 Fahr.), fell to 39 (102.2 Fahr.), and again rose to 40.8 (105.44 Fahr.) When death occurred, the temperature was 39.5 (103.1 Fahr.). The irregular atypic course of these curves appears to belong especially to cases of miliary tuberculosis, in which disease we observe such sudden rises as were shown in case 6, and as Fox regards as characteristic of acute typhus ("Clinical Observations on Acute Tubercle."—*St. George's Hospital Reports*, vol. iv.)

Turning now to the differential diagnosis, it appears to me that the whole appearance of the disease is so characteristic that it is worth while to point out accurately the distinction from one disease only; I mean syphilis. To establish a differential diagnosis from diphtheria, aphthæ, follicular angina, &c., would be superfluous, as these affections cannot be confounded with tuberculosis. The benign ulcers of the pharynx also, aphthous and follicular ulcers, &c., are so well characterised that it appears impossible to confound them with tuberculosis. The rare form of lupus is distinguished from tuberculosis by the size of the nodules, by the depth of the ulcers, the smaller amount of pain attending them, the concomitant symptoms, and so many other circumstances, that it is scarcely possible to confound the diseases (see Homolle, *Des Scrophulides graves*, Thèse de Paris). Some attention is required in diagnosing tuberculous ulcers from the so-called scrofulous ulcers of the pharynx. In the latter, the frequent occurrence in their neighbourhood of yellow spots, formed by small abscesses perhaps arising in the glands, may lead to deception. More careful observation, however, will show that we have not to deal with grey or cheesy nodules, but with abscesses, the pus in which is indeed often thickened. Besides this, the scrofulous ulcers extend more deeply, have sharply defined, not eroded edges, generally follow the long axis of the body, &c. A careful examination is sufficient to distinguish them from tuberculosis.

That pharyngeal tuberculosis is easily confounded with syphilis is apparent from the circumstance that all my cases, and many of those related by others, were probably regarded by the numerous practitioners who were first consulted as syphilitic, and in one case at least treated accordingly. If to this error in diagnosis be due the rarity of pharyngeal tuberculosis and the frequency of syphilitic ulcerations of the pharynx, and the custom of regarding all ulcerative processes in the pharynx as syphilitic, this appears to me an indication for giving a more elaborate answer to the question, how tuberculosis is distinguished from syphilis.

In answering this question, we must, in the first place, return to the complications. Some of these rather increase the resemblance than are capable of being used in diagnosis. In this respect is especially to be noticed the swelling of the lymphatic glands, which in tuberculosis is found in distant parts, e.g., near the bend of the elbow. The extension also of the tuberculous ulcers to the tongue, to the mucous membrane of the cheeks and lips, and to the larynx, may also easily, on superficial observation, cause the disease to be confounded with syphilis. Another fact indicating difficulty in the differential diagnosis is the affection of the testes in pharyngeal tuberculosis, as occurred in my third case.

But assuming that in a case of this kind syphilitic complications of any kind appear on the external skin, in the bones, in the form of cicatrices in the throat, loss of substance in the nose, &c., are these proof that the ulcers of the pharynx are also of syphilitic nature? I scarcely think so; for cases are by no means rare in which the presence of tuberculosis in syphilitic individuals is proved both by clinical observation and by *post mortem* examination. I will not here enter on the subtle question whether syphilis and tuberculosis stand in causal connection; *i.e.* whether tuberculosis may be called into existence directly through syphilitic changes, such as caseous transformation of gummatous swellings, but I will only insist on the frequency of the occurrence of tuberculosis in syphilitic persons. In proof of this I could adduce a host of cases which I have had the opportunity of observing, partly in my own practice, and partly in the Pathological Institute, and in Professor Virchow's course of demonstrations. It then follows that the presence of the signs of past or actual syphilis in the same body does not of itself show that the ulcers in the pharynx are also of a syphilitic nature.

A similar condition obtains in the converse case. The evidence of phthisis or tuberculosis in other organs, among which the lungs took the first place, would not of itself prove that the ulcers in the pharynx were tuberculous, and not syphilitic. For there is no reason why a phthisical patient should not become infected with syphilis; and the two diseases can very well coexist. Besides, there are cases of pulmonary syphilis which so change the signs presented by auscultation and percussion, as to cause the presence of phthisis to be assumed. I am well aware that it is generally assumed that, in contradistinction to phthisis, syphilis generally affects the lower parts of the lungs. I have, however, met with a case in which syphilitic affections of the apex were found, presenting the appearance of phthisis. The subject was a shoemaker, aged 42, who was admitted into the Augusta Hospital on January 15, 1874. In 1857 he had had syphilis; for a year he had been hoarse, and had had cough and expectoration. He now complained of pain in the left knee, in which no objective changes could be observed. The supra-clavicular and infra-clavicular fossæ were considerably sunken, the percussion-sound over both apices was dull, more on the right side than on the left, the respiratory murmur on both sides above was indistinct, with prolonged quasi-bronchial expiration, and distinct though scanty rhonchi. Laryngoscopic examination showed redness and swelling of the arytaeno-epiglottic folds, and of the right vocal cord, with shriveling of the free edge of the epiglottis, and of the other vocal cord. There were also suspicious ulcers in the pharynx. I formed the diagnosis of pulmonary phthisis and syphilis of the larynx. Under the use of iodide of potassium, the lung-signs improved so greatly that I was led to order mercurial inunction; and I had the satisfaction of seeing the signs of pulmonary disease completely disappear. The upper parts of the chest remained indeed depressed, but the rhonchi and cough ceased, and even the respiratory murmur returned nearer to the vesicular type, so that the patient could be dismissed as cured. Such a recovery could scarcely take place in phthisis under mercurial inunction; and therefore in this case one is obliged to assume that pulmonary syphilis was present. Similar observations have been made by other authors (see Bäumler, in Ziemssen's *Handbuch*, vol. iii). It is therefore necessary

to be especially careful in estimating the value of the physical signs of the lungs in the diagnosis of ulcers of the pharynx.

There is one complication which seems to me important in the diagnosis of pharyngeal ulcers; I mean tubercle of the choroid, which is sometimes present, the existence of which warrants us in at least assuming that there is general miliary tuberculosis.

The previous history always affords us some guidance in the diagnosis. It is true that in syphilis the proof of infection and of secondary symptoms is extremely difficult, and sometimes impossible, and many patients affected with this disease have so much inducement to tell untruths even to their physicians, that when there is reason for assuming syphilis, one may be tempted to overlook the evidence that they are not syphilitic. This, however, varies in individual cases, and in doubtful cases the express assertion of the patient that he has never had syphilis deserves respect.

The less certain, however, are the conclusions which can be drawn from the anamnesis and the complications, the more satisfactory is it that the appearance of the ulcers is in itself sufficiently characteristic to establish the diagnosis. Isambert states that, as soon as he had become sufficiently impressed with the characters of pharyngeal tuberculosis in the first case observed by him, he recognised the disease as such in all the later cases. I can agree with him in this. The ulcers in the pharynx present the tuberculous character in so prominent a degree, that even during life careful observation is quite sufficient for an accurate diagnosis, when once the attention has been fixed on the presence of tubercles in the pharynx. We do not need the complications to aid us in bringing to light the nature of the disease before us; the observation of the pharynx in itself affords us far more sufficiently an exact standpoint, as regards both the local process and the disease. I have above described the appearance of the ulcers, and need here only point out the differences between the syphilitic and tuberculous affections. The *plaques muqueuses* can scarcely be confounded with lenticular ulcers; the whiter colour of the infiltration, and their whole behaviour, prevent this. The ulcers, too, belonging to the later period of syphilis, which are sometimes distinguished with difficulty from the so-called scrofulous ulcers, are very distinct from the tuberculous ulcers. They penetrate more deeply, have sharp edges, tend to produce contractile cicatrices, have no grey nodules in their neighbourhood, &c. Difficult as it is sometimes to describe such differences in general terms, they are distinctly marked in the observation of the individual case. An accurate distinction between tuberculous and syphilitic processes is, however, considering the difference of the prognosis and treatment, of the highest practical importance.

As regards the course of the disease, it does not appear to vary essentially, whether the pharyngeal tuberculosis primarily attacks the patient, or supervenes on already existing phthisis. In most cases, pharyngeal tuberculosis generally leads to death in a relatively short time (two to six months). Case 6, in which the first symptoms appeared in the beginning of October, died on December 22. The patient in Case 4 died on July 15, ten weeks after she had believed herself to be in good health. Isambert relates in his first essay a case of two months' and another of six months' duration. In his second essay he assents to the statement of Cornil (*Journal des Con-*



*naissances Médicales*, 1875, July 13) that under the acute form of pharyngeal tuberculosis there is a more chronic one. In Cornil's case a phthisical patient was secondarily affected with pharyngeal tuberculosis in June 1874, and died in September. Isambert himself describes two cases under his own observation, in which, at the time of publication, unexpected improvements had set in, on the occurrence of which he had not reckoned. The number of cases, however, appears to me to be too small to enable us to draw general conclusions from them.

As has been already said, death occurs in this disease not from narrowing of the larynx, but from exhaustion. The emaciation, the fever, the difficulty of taking food, all combine to produce a high degree of weakness. Towards the end of life delirium sometimes sets in; for this, the necropsy in the sixth case afforded no explanation in the form of lesions of the intracranial organs; it must therefore be regarded as delirium from inanition.

The prognosis is clear from what has been said above. As regards treatment, pharyngeal tuberculosis is one of those affections that bring more credit to diagnosis than to therapeutics. The first object of our attention must be the maintenance of the patient's strength; antisyphilitic treatment is altogether injurious. The local use of astringents has hitherto been of no service; but Isambert says that benefit has been derived from daily brushing the parts with glycerole of morphia, a plan which he used in the two cases which improved, and which would be indicated as a means of relieving pain.

To sum up, milary tuberculosis of the pharynx is a disease which attacks either apparently healthy persons, or those already affected with phthisis of other organs. It deposits an eruption of grey nodules in the pharynx, which leads to well characterised lenticular ulcers, and is accompanied by extensive milary tuberculosis. The patients generally die rapidly from exhaustion.

#### DESPINE AND VENTURI ON HYSTERIA IN MAN.

DR. P. DESPINE (*Annales Médico-Psychologiques*) after remarking that, frequent as cases of ordinary hysteria are, the acute form of the disease is but rarely met with, and very seldom in man, relates a very remarkable case occurring in a young man.

M. X., æt. 24, of dark complexion and nervous temperament, was attacked by violent convulsions after a sudden fright, caused by a fire of petroleum. In the interval between the convulsions his pulse was feeble, appetite poor, tongue furred, and he complained of a severe pain in the suboccipital region. He was troubled by the obtrusion of sad ideas, painful scenes of his life presenting themselves to him. He spoke of the death of parents and friends, wept, and had momentary hallucinations, in which he saw flames. The attacks from which he suffered manifested three forms—a state of somnambulant sleep, a conscious convulsive attack, and an unconscious convulsive attack.

1. The patient passed all his nights in this somnambulant sleep, and all his senses seemed to be suspended; no amount of pinching, pricking, or shouting seemed to have any effect upon him. The eyes were closed, and on opening the lids, the eyeballs were turned up and convulsed. It occurred to us to try the effect of the magnetism of touch, not that we estimated its effect at all highly, but solely to see what might happen. We placed the palmar

surface of one of our thumbs on the palmar surface of one of his thumbs, and then spoke in a deep voice. At the third time of speaking, to our great astonishment, and that of those about him, he awoke up.

2. The conscious convulsive attack showed itself by the most violent shaking of the upper limbs, gesticulations, and jerky cries. These spasmodic phenomena lasted an hour and then suddenly ceased. Consciousness was perfect, as the patient could afterwards tell all that had gone on around him. Being one day present, we applied our thumbs as before, and at once stopped the attack, which had usually lasted an hour.

3. The unconscious convulsive attacks commenced by violent convulsive movements in the limbs, so that three people were required to hold him. Then he would walk rapidly about, gesticulating, as if under the influence of hallucinations of fear. The eyes were always fixed and sometimes closed fast. The pupils, as in ordinary somnambulism, were much dilated, but sensitive to light. With eyes fixed, the patient saw objects, for he moved rapidly about in a small room without upsetting the furniture. With closed eyes he once in our presence threw himself towards the door, seized the handle, and opened it, without groping. These attacks lasted for an hour and a half, and then suddenly ceased. On recovering, he did not understand the inquietude of those about him; did not know what had passed, simply feeling bruised and tired. The most considerable attack occurred in the morning, after the night's sleep, leading one to think that the morbid activity of the nervous system, accumulated during long repose, discharged itself in a violent explosion. The sleep of the day did not seem to lessen the severity of the unconscious attack. Indeed, nothing seemed to appease the nerve-storm; but after twenty days the attacks seemed to lessen in severity, and the unconscious convulsive attacks slowly assumed more and more of the somnambulant character. In these attacks he did things much more rapidly than under ordinary circumstances, and performed many automatic acts. I cite one. With closed eyes he left the room, rapidly walked into the bath-room, turned on the water, took the thermometer from the nail, plunged it into the bath, looked at it, and replaced it on the nail. All these acts were done with the greatest precision. On the twenty-third day of the disease he commenced certain acts, which he continued to repeat three or four times a day. He would walk rapidly into his father's bedroom, kneel down at the bedside, make the sign of the cross, and his lips were seen to move, but no sound was heard. Making again the sign of the cross, he would return to his room. He was quite unconscious all the time, for we pinched and pricked him severely without any result, and the odour of strong ammonia had no effect. A young servant-maid, meeting him in one of his somnambulant walks, seized his hands to make him sit down, at the same time asking him mechanically how he felt. To the great surprise of those about he answered her, and this was the first time he had spoken during a somnambulant attack. The maid then asked him several questions, to which he gave answers. If, however, she did not hold his hands, he did not reply. He told her that the bromide of potassium cured him in a former attack. He said that in eight days he would be better, and that he should recover slowly. The maid asked him who was in a certain room at the top of the house, and he said, "A young girl sleeps there," which was true. It was found that he could only give answers to questions of which the

maid herself knew the answers. On the twenty-fifth day, the number of conscious and unconscious attacks were equal. He complained that the pain at the back of the neck was as bad as ever. His treatment was by baths, bromide of potassium, and valerian. The religious attitude which we have mentioned as occurring in the somnambulant sleep became more pronounced, and it is curious to observe that it did not seem to have any origin in previous habits of habitual prayer, but may have arisen from irritation in cerebral cells, near what we may term the religious centre. During the conscious attacks a curious phenomenon was observed. When the patient micturated, during the act he turned round two or three times, and would have fallen if not sustained. Since he had discovered the magnetism of the maid's touch upon him (that is to say the action of the nervous system of a person in health upon the nervous system of a diseased person) he had asked to be sent to sleep when suffering from a convulsive attack. To obtain that result the maid took both his hands, and in two or three minutes the convulsions ceased, and he fell into a somnambulant sleep. When in this state, and the eyelids were opened, his eyes were seen to be turned upwards in a convulsive manner.

On the thirty-first day of his illness, in the unconscious convulsive attack of the morning, he spoke for the first time spontaneously. He called Martha (the maid's name) several times, and placed his hand to his ear, as if listening. He then said that Martha had taken his coffee to the kitchen, and directly afterwards that she had drunk it. On inquiry this was found to be true. At the time when he called Martha some one knocked at the door. He said, "It is not Martha, but her sister", which was true. The hysterical nervous affection is so mobile, and its manifestations so various, that one often sees nervous phenomena of the most opposite character and varied intensity substituted for each other. So in this patient, when, in an attack, his habitual state was one of paralysis, in a moment it turned to exaggerated and excessive sensibility. To obscured hearing succeeded hyperæsthesia of that organ, and cutaneous anæsthesia succeeded painful hyperæsthesia. From this case one sees how necessary it is to study the phenomena of somnambulism—a state which seems to be closely allied with hysteria; not to see the somnambulist accidentally at one particular period, but to observe him through all the phases which his nervous state presents.

Having the opportunity of studying the therapeutic effect which the magnetism of touch had, we shall indicate our observations upon this patient. We do not believe that the observation can apply to every case of acute hysteria, because that disease is individual to a supreme degree. But when we saw the influence this person had upon our patient, we recommended the employment of her influence to stop the convulsions. This is what was done at the commencement of an attack. Martha took his hands, and the spasms ceased. When the spasms ceased, she asked, still holding his hands, if she might awaken him. "No, not yet," he answered. Ten minutes afterwards, he said she might; and she, holding his hands, said, "Awake." He instantly opened his eyes and became conscious, but did not remember what had passed. When told what had passed, he recommended us not to stop the spasms, and not to magnetise him when they had ceased. To what conclusion could we come from these facts as to the therapeutic action of magnetism and somnambulism

in acute hysteria? 1. As regards the spontaneous somnambulism, provoked by the disease itself; the state during which the unconscious attacks occurred has not any salutary action upon the disease, because it is part of the disease itself. This somnambulant sleep—the long repose of the night—not being invaded by spasms, the spasms are stronger which follow this sleep. 2. The magnetic action of a healthy person upon our patient arrested all the spasms; but the arrest of the movements was hurtful to the patient; he was heavy and fatigued on awakening. From this we may conclude that the nerve-storm, once commenced, must not be stopped, for it may be a source of relief, a safety-valve for the escape of nervous erethism, that is to say, of the disease itself; and that little by little it would exhaust itself. We therefore recommended the discontinuance of the magnetic influence. Our patient had said, when in an unconscious state, that in eight days he should be better. His attacks were not so severe after this, and a few days later, about midday, while in a conscious state, he fell into an ecstasy; prayed to the Virgin, commending himself to our Lady of Salette. He asked for water from that pilgrimage, sprinkled himself with it, and, still holding the bottle, asked for bromide of potassium, which he put in the bottle, and then drank off the contents. Standing for some time in an ecstatic attitude, he said he saw the Virgin with two angels at her side (as represented in certain images). Taking the hands of his cousins, he said, "Holy Virgin, bless these and my father." Then, bending in the attitude of listening, he said, "Yes! yes! I hear, yes." The ecstasy ended, and he did not that morning have his ordinary attacks. Two days later, he had hallucinations, in which he saw many of his relations who had long been dead. His attacks were now all in consciousness, and he still had the somnambulant attacks, still complained of suboccipital pain. On May 1st, the day which he had named for his recovery, he had again an ecstatic attack, in which he said he saw the Virgin. Being present, we placed our finger upon the left eyeball, and turned it well outwards. We then asked what he saw, and he said, "Two Virgins," and pointed to where he saw them side by side. This experiment we repeated several times with the same result, which proves that patients the subjects of hallucinations report by their organs of sense the impressions which internal causes produce in the sensory ganglia. A moment afterwards he closed his eyes, and then, putting his hand up to them said, "I see the Virgin on the back of my head;" probably, as when one has looked at a luminous object, we have seen it still on closing the eyes. The retina seemed to have been impressed by the subjective image in the same way as by a real image, external to the body. This attack lasted an hour, and the hallucinations occurred at the early part of it. When the hour struck, he invoked the Virgin, and said, "It is finished." From this time the patient began rapidly to recover, although during two or three months he suffered from a slight return of some of the symptoms. By his friends and himself his recovery was looked upon as a direct miracle, due to the intervention of the Virgin. Dr. Despine remarks, that the prediction of recovery is found in other cases quite unconnected with any religious manifestations, and that, although religious manifestations of an automatic origin occurred in his patient, which presented an agreeable and easy explanation of his recovery to those related to him, such solution must be rejected by the man of science. The ecstatic phenomena with hallucination were here patholo-



gical, and were of the same order as the spasms and the sensorial anæsthesia and hyperæsthesia. These various phenomena, changing frequently during the same attack, were no doubt due to the portion of the nervous system which was invaded by the nerve-storm.

Dr. Silvio Venturi, assistant in the Psychiatric Clinic at Padua, relates in the *Gazzetta Medica Italiana delle Provincie Venete* (abstract in *Lo Sperimentale*, January) the following case. A. M., aged 31, had been addicted to onanism from his youth; he had recurrent headaches, gastric disorder, nocturnal emissions, etc. He was immoderately addicted to wine and venery. Six years ago, he had convulsive attacks of spasm in the cardiac region, which became worse, in spite of the use of bromide of potassium and chloral. Having at last recovered from these, under treatment in hospital, he presented the following condition. His general aspect was robust; his face had an appearance of stupidity; vision was normal, but the eye was abnormally sensitive to strong light and to transparent objects, such as a glass of water. The glands in the neck were indurated. The region of the stomach was very sensitive: touching it produced troublesome hiccup. The heart-sounds were feeble, but there were no abnormal murmurs. Palpation and percussion of the chest and abdomen gave negative results, except that they produced hiccup. His intellect, at first active, later became dull; articulation of words was sometimes imperfect. He presented a condition of childish fatuity, crying and laughing from slight causes. Of a rather irascible temper, he had attacks of almost convulsive rage, with grinding of the teeth, groans, which were appeased by a smile or a caress. He had illusions of vision. On being desired to restrain himself, he did so with difficulty, and then felt vague painful sensations in his body. Generally of a melancholic disposition, he despaired of his health. Besides sensorial illusions, there was hyperæsthesia of the special senses: he had noises in the ears; and was very sensitive to music, so that the merely whistling or singing brought on an attack. The sense of smell was excited by the slightest odour. Touching any part of his body produced active reflex movements. He had constant headache, from the sagittal suture towards the left side. His attacks were sometimes rare, sometimes frequent; slight or very severe: they began spontaneously, or were produced by emotion, contradiction, or any trifling cause. They were characterised by general tremors, protrusion of the tongue, sobbing, disorderly movements of the hands and fingers, and pain in the epigastrium radiating to the lumbar regions. Sometimes these symptoms were accompanied by so many others as to present the appearance of almost every neurosis. Sometimes there was continuous crying; sometimes epileptiform, sometimes tetanoid attacks. He was frequently seized with a rage for running and then stopping suddenly.

He was first treated by Pinali with bromide of potassium, and then came under the care of Professor Tebaldi: the diseased condition, however, continued. The peculiar hyperæsthesia of hysterical patients was well manifested in this case; the injection of simple water was sometimes sufficient to give slight relief. His sleep was broken: the pain was most severe in the spinal region. On two occasions, he had delirium of persecution. The only remedy, out of many, from which he appeared to derive benefit, was the douche. After remaining about two years in the hospital at Padua and the asylum at Venice, he was dismissed slightly improved.

## KÜHNE ON PHOTO-CHEMICAL PROCESSES IN THE RETINA.

ON January 5th, Dr. W. Kühne, Professor of Physiology in the University of Heidelberg, read before the Naturhistorisch-Medicinisches Verein, of Heidelberg, a paper entitled "Zur Photo-chemie der Netzhaut". The following abstract of it is published by Dr. Arthur Gamgee in *Nature* for February 1st.

A short time since, Boll (a pupil of Max Schultze and Du Bois-Reymond, who now occupies the Chair of Physiology in Rome) communicated to the Berlin Academy the remarkable fact that the external layer of the retina, *i.e.*, the layer of rods and cones, possesses in all living animals a purple colour. During life, according to Boll, the peculiar colour of the retina is perpetually being destroyed by the light which penetrates the eye; darkness, however, restores the colour, which vanishes for ever almost immediately after death.\*

The wonderfully suggestive nature of Boll's discovery led Kühne to repeat his observations; in doing so, whilst he has confirmed the fundamental statement of Boll, he has ascertained a number of new facts of great interest.

Kühne's observations were made on the retinae of frogs and rabbits. In the first place, implicitly relying upon the statements of Boll, he examined, as soon as possible after death, the retinae of animals which had been kept for some time in darkness. He soon found that the beautiful purple colour persists after death if the retina be not exposed to light; that the bleaching takes place so slowly in gas-light, that by its aid the retina can be prepared and the changes in its tint deliberately watched; that, when illuminated with monochromatic sodium light, the purple colour does not disappear in from twenty-four to twenty-eight hours, even though decomposition have set in.

These first observations of Kühne on the vision-purple (*Schpurgel*), as he terms it, whilst they showed that the disappearance of the colour is not, as Boll had asserted, a necessary concomitant of death, removed many of the difficulties which stood in the way of a careful investigation. Carrying out his preparation in a dark chamber illuminated by a sodium flame, Kühne was able to discover the conditions necessary to the destruction of the vision-purple as well as some facts relating to its restoration or renewal.

As long as the purple retina is kept in the dark or is illuminated only by yellow rays, it may be dried upon a glass-plate without the tint changing; the colour is not destroyed by strong solution of ammonia, by saturated solution of common salt, or by maceration in glycerine for twenty-four hours. On the other hand, a temperature of 100° C. (212 Fahr.) destroys the colour, and alcohol, glacial acetic acid, and strong solution of sodium-hydrate produce the same effect.

Kühne's next observations were directed to the discovery of the influence of light of different colour upon the vision-purple. It would appear that the more refrangible rays of the spectrum have the greatest action, and that the red rays are as inactive as the yellow.

Kühne now found the incorrectness of Boll's asser-

\* This account of Boll's researches is taken from Kühne's paper. The latest number of the *Monatsberichte* of the Berlin Academy which has yet reached Manchester, which includes the Proceedings for September and November, does not contain Boll's communication, which is of later date (November 12).

tion that the retina of the living eye exposed to ordinary daylight does not exhibit the vision-purple, for on preparing the eyes of animals which had just been exposed to light, as rapidly as possible in the chamber illuminated by sodium light, he discovered that the retina was of a beautiful purple. It was only when eyes were exposed for a considerable time to the direct action of the sun's rays that a fading of the purple colour was perceived.

A most suggestive experiment now threw some light upon the circumstances which retard the decolorisation, and which restore the vision-purple. The two recently extirpated eyes of a frog were taken; from one the retina was removed, whilst an equatorial section was made through the other eye, so as to expose the retina and still leave it *in situ*. Both preparations were exposed to diffuse daylight, until the isolated retina had lost its purple colour. On now taking the other preparation into the yellow chamber and removing the retina, it was found that its colour yet remained: it was *dark red*, but was bleached when exposed in its naked condition to daylight.

This experiment was confirmed by others, in which the effect of strong sunlight was substituted for that of diffuse daylight.

But the most curious results of Prof. Kühne's experiments have reference to the restoration of the vision-purple. If an equatorial section be made through a recently extirpated eye, and a flap of retina be lifted up from the underlying choroid and exposed to light, the purple colour of the flap will be destroyed, whilst the colour of the rest of the retina persists. If, however, the bleached portion of the flap be carefully replaced, so that it is again in contact with the inner surface of the choroid, complete restoration of the vision-purple occurs. This restoration is a function of the *living* choroid, probably of the living retinal epithelium (*i.e.*, of the hexagonal pigment-cells, which used formerly to be described as a *part* of the choroid), and it appears to be independent of the black pigment which the retinal epithelium normally contains. As it is absolutely dependent upon the life of the structures which overlie the layer of rods and cones, it is natural that it should be observed to occur for a longer time after somatic death in the frog than in the rabbit.

Kühne's researches, though suggested by the interesting observation of Boll, have not only corrected many errors which that observer had committed, but have led to the discovery of facts which add immensely to the importance of the newly-observed vision-purple.

They have shown that the living retina contains a substance which under the influence of light undergoes chemical changes, which vary in intensity according to the intensity and character of the luminous rays, and they point to the existence of structures in connection with the retina which as long as they are alive are able to provide fresh stores of substance sensitive to light.\*

Since the above account of Kühne's researches was written, he has published in the *Centralblatt für die Medicinischen Wissenschaften* (January 1877, No. 3) a short paper, dated January 15, in which he

announces the startling confirmation to his previous researches afforded by his *having been able to obtain actual images on the retina which corresponded with objects which had been looked at during life* (!).

The discoveries of Boll and Kühne must, as the latter remarks, have led to the thought that after all there might be some truth in the stories which we all have heard of images of things seen in death being left imprinted upon the eye. After his first researches Kühne endeavoured over and over again to observe on the retina of rabbits bleached spots corresponding to the images of external objects, but his endeavours failed. As Kühne remarks, and as all readers who have understood his experiments will allow, in order to obtain a permanent photograph, or, as he terms it, *optogramme*, the effect of the light would have to be so prolonged or so intense as to destroy the balance between the destruction of the vision-purple and the power of the retinal epithelium to restore it.

Kühne took a coloured rabbit and fixed its head and one of its eye-balls at a distance of a metre-and-a-half from an opening thirty centimetres square, in a window shutter. The head was covered for five minutes by a black cloth and then exposed for three minutes to a somewhat clouded midday-sky. The head was then instantly decapitated, the eyeball which had been exposed was rapidly extirpated by the aid of yellow light, then opened, and instantly plunged in 5 per cent. solution of alum. Two minutes after death the second eye-ball, without removal from the head, was subjected to exactly the same processes as the first, *viz.*, to a similar exposure to the same object, then extirpation, &c.

On the following morning the milk-white and now toughened retinae of both eyes were carefully isolated, separated from the optic nerve, and turned; *they then exhibited on a beautiful rose-red ground a nearly square sharp image with sharply defined edges; the image in the first eye was somewhat roseate in hue and less sharply defined than that in the second, which was perfectly white. The size of the images was somewhat greater than one square millimetre.*

Professor Bunsen was amongst the witnesses of this beautiful experiment.

## HAMMOND ON SPINAL IRRITATION: ITS PATHOLOGY AND TREATMENT.

DR. HAMMOND of New York (*A Series of American Clinical Lectures*, edited by Dr. Seguin, Vol. ii, p. 277, New York, 1876), has endeavoured to prove that the disease commonly called spinal irritation, hysteria, spinal congestion, exhaustion, neuralgia, etc., should be called posterior spinal anæmia, inasmuch as it consists essentially of an anæmic condition of the posterior columns of the spinal cord. As people rarely, if ever, die of spinal irritation, there are no opportunities of making *post mortem* examinations of their spinal cords, and we must therefore look to circumstantial evidence rather in proving this to be the case than to the direct testimony of our senses. In proceeding to prove his theory, Dr. Hammond, in choicest American, likens himself to a bold man "who pitches a hand-grenade into the midst of drones and dullards, who sit quietly with folded hands waiting for something to turn up."

The symptoms of spinal irritation are both centric and eccentric. Of the former, pain excited by pressure on the spinous processes, or on either side of them, is the most constant; it is sharp, lancinating,

\* I have repeated all the more important observations of Kühne with the eyes of several *Rana temporaria*, and with those of two rabbits, of which one was an albino, and can entirely confirm all his interesting facts. In ordinary daylight, the purple-red colour of the frog's retina, and its subsequent decolorisation, may be most satisfactorily demonstrated. The use of the dark chamber illuminated by sodium is, however, useful in cases where the dissection of the eye has to be conducted with care.—A. G.



and remains for a minute or more after the pressure is removed. Spontaneous pain is not so constant, but may be produced immediately by emotional disturbance. Amongst the eccentric symptoms may be mentioned vertigo, headache, noises in the ears, disturbances of vision, tenderness of the scalp, fullness in the head, loss of power in some of the cerebro-spinal nerves, clonic spasms of the muscles, contractions of the arms, aphonia, and hiccup. The mind may be unhinged, sleep deranged, the dreams unpleasant, and a tendency to somnambulism may be present. Occasionally there is excessive salivation, or the mouth and tongue are parched; nausea and vomiting occur persistently after eating, and there is palpitation of the heart and irregularity of its action. Epileptiform paroxysms, and choreiform movements, beginning in the muscles of the face or arms, and extending to other parts, may also occur.

Such are the symptoms when the *cervical* portion of the cord is suffering. Where the *dorsal* part of it is affected, there are gastralgia, inframammary pain and intercostal neuralgia, nausea, vomiting, pyrosis, flatulence and acidity, cough, epigastric pulsation, and asthma. The *lumbar* portion, when affected, gives rise to neuralgic pain in the lower extremities, uterus, vagina, ovaries, intestines, or muscles of the back or abdomen, and, in the male, in the testicles. There may be various symptoms on the part of the bladder, and hip and knee-joints.

Dr. Hammond then proceeds to combat in detail the objections which have been, or might be, raised against his theory of posterior spinal anæmia. He ridicules the idea that the spinal cord could not be anæmic unless the whole system were in a like condition; urges that anæmia may be confined to the posterior columns without involving the other portions of the cord, just as the lesion of locomotor ataxy is confined to a limited sphere in the same organ; and then gives his reasons why the symptoms of spinal irritation should be more referable to anæmia than to any other condition. Irritation means weakness, and weakness means defective nutrition or anæmia. An anæmic retina cannot bear the full light of day; an anæmic heart beats with great rapidity; an anæmic brain aches; and in the same manner an irritable spinal cord is the seat of pain; and organs in anatomical relations, through their nerves, with such a cord, should exhibit indications of morbid sensibility.

The principle of exclusion is likewise appealed to, as no other known condition could give rise to the phenomena. Again, the suddenness with which spinal tenderness may become developed indicates vascular derangement, *i.e.*, anæmia, owing to vasomotor spasm of the spinal vessels. The only other possible condition could be congestion, and this, if limited to the posterior columns, would induce anæsthesia, not pain. The action of medicines may also give us a clue as to the condition of the cord. Thus strychnia, phosphorus, and picROTOXINE, which increase the amount of intraspinal blood, are most effectual for this disorder; while ergot and belladonna, which contract the intraspinal vessels, aggravate the symptoms. Such patients are always better after lying down; while those with congestion or inflammation of the cord are worse while lying down, and for a time after rising. Again, the promptness with which certain functional derangements disappear, when local applications are made to the affected region of the cord, indicates that this latter is the primary seat of the disease. Thus obsti-

nate vomiting will be stopped by a blister to the tender portion of the spine, etc.

The posterior columns being the chief seat of sensibility, Dr. Hammond sees no difficulty in understanding the relation existing between spinal irritation and anæmia of the posterior columns, which to him are the same thing.

The treatment of this disorder should be directed towards the removal of the cause, the improvement of the general tone of the system, increasing the amount of blood in the spinal cord, and the setting up of a counter-irritant action in the immediate vicinity of the painful region of the spine. With regard to the cause, overwork, or defective nutrition, or improper hygienic factors of some other kind, must be overcome. The most difficult thing is to combat depressing emotions. Iron, quinine, the mineral acids, and cod-liver oil, are the best means for improving the general tone of the system. The amount of blood in the spinal vessels may be increased by strychnia, phosphorus, and opium. PicROTOXINE acts much like strychnia, and is given in doses of  $\frac{1}{1000}$  to  $\frac{1}{500}$  grain three times a day in pill. Such doses do not produce any twitching or rigidity of the muscles. Whiskey and its congeners are also generally indispensable. Blisters are the best form of counter-irritants. They should be 8 or 10 inches long, by 3 or 4 wide, and should be placed immediately over the painful region of the spine. The actual cautery, brought to a white heat, in a blast lamp or a Bunsen's burner, is more readily applied and less painful than a blister, and acts in apparently desperate cases with great promptness; it acts, however, less amply than blisters, so that, unless there be imperative necessity for haste, blisters are to be preferred. Special attention should be given to the stomach when there is persistent vomiting, and everything is rejected. The diet must then be of the simplest possible character, and only very small quantities taken at a time. 'The smallest quantity that can be kept down is better than a larger quantity thrown up.' Warm liquids are often more apt to be retained than cold ones. Amongst medicines the best is valerianate of caffeine, in doses of from three to five grains as often as it may be required. Its only objection is its great cost. Cerium is inefficacious in the vomiting of spinal irritation. Galvanism and faradism applied to the spine are also useful, but cannot replace blisters; and to depend upon electricity to the exclusion of the other means mentioned would lead to disappointment.

JULIUS ALTHAUS, M.D.

#### STEINITZ ON ACUTE PNEUMONIA IN CHILDREN.

Dr. JULIUS STEINITZ, of Breslau, writes as follows on this subject in the *Allgemeine Medicinische Central-Zeitung* (No. 95 and 96, 1876).

While pneumonia in childhood frequently comes under our notice, it is rarely that we can be contented with the simple diagnosis of the disease. To seek for the causes is of the highest importance, and we know from experience that in a large number of cases pneumonia is manifested only as the result of some other pathological condition. It is then absolutely necessary, in cases of inflammation of the lung, to make, not the disease, but the patient the object of treatment.

The careful observation of eighty-three cases of pneumonia in children from six months to ten years

of age, which have been under my care during about a year and a half, has convinced me that inflammation of the lungs in children has so much that is special in its etiological, predisposing, and diagnostic conditions, that one is justified in again taking a review of this often-described disease, even at the risk of adducing nothing new. The pneumonia of children is divided into that of the newly born and that of older children. (Congenital pneumonia is very rare). It occurs in the most various climates, and in the most populous localities. The most influential cause in its production are cold—especially cold draughts of air—principally north and north-east winds, as well as sudden changes between cold winds and warm currents. It is least frequent in the summer months, while in autumn, especially in November and December, cases of inflammation of the lungs are more frequent; and it reaches its maximum of frequency in the spring months—April and May. In Breslau it appears only sporadically during the summer months and in October; but if a strong north-east wind prevail, as was the case in October 1866, it occurs with terrible frequency. I will here remark that the maximum of cases of inflammation of the lungs does not coincide with that of infantile pneumonia—the former is most prevalent in January, the latter in May.

The statements as to the frequency of pneumonia during the period of suckling vary. According to some statistics it is very frequent, according to others less so. But during the second and fifth years it attains a high degree of frequency, and it extends over the whole period of childhood. In the suckling child it arises partly in the simple form, partly as a result of bronchitis, and also in the course of malignant diseases, such as aphthæ and induration of the cellular tissue. In later years it is generally simple.

Pneumonia occurs much more frequently among the children of the poor than of the well-to-do classes. Strong children are far more readily attacked by the pure diffuse form of the disease than weaker children. An earlier attack of pneumonia predisposes to a second. The secondary form appears in the course of severe illness of any kind. There is no certain evidence of a special predisposition to the disease in either sex in children. In my 83 cases the following were the numbers:—

AGE.	M.	F.	TOTAL.	DEATHS.
Six months to 1 year ...	4	4	8	3
1 to 2 years .....	16	0	16	7
2 to 5 years .....	8	20	28	10
5 to 7 years .....	16	10	26	2
7 to 10 years .....	15	7	22	2

I know quite well that this table can make no great pretension to value, for the statistics of pneumonia must be based on a much larger number of cases. It may, however, serve as an excuse for the expression of some clinical facts.

In proceeding to examine the predisposing causes, we must take into account, along with the constitutions of the children, their nutrition, and the history of previous illnesses. Of the 28 children from two to five years old, 19 were the children of poor parents. These 19 were mostly of good constitution, but had more severe illnesses than others who were weaker and in higher social condition. In the 10 who died, I was able to ascertain that a previous attack of intestinal or bronchial catarrh, partially improper feeding, imperfect ventilation, and crowded dwelling, favoured the predisposition, and were chargeable with the rapid collapse. It is an estab-

lished fact that dentition in early childhood is very frequently accompanied by pneumonia. A very powerful predisposing cause is a previous attack of pneumonia; as is also descent from unhealthy parents. In these children the organism is not only the receptacle, but the breeding place of the disease. A long period of latency not unfrequently renders an investigation of the causes difficult: in small children, pneumonia may occur in a form which points far more distinctly to an acute affection of the brain or abdomen than to one of the lungs.

To sum up—

1. Pneumonia attacks children of all ages more or less, and almost without distinction of sex.

2. The disease occurs frequently at certain times of the year; its greatest prevalence is in November, December, April, and May.

3. The maximum number of cases of pneumonia in children is in May; in the general population, in January.

4. The predisposing causes are: *a*, dentition; *b*, constitution, and improper feeding; *c*, previous illnesses; *d*, previous attacks of pneumonia; *e*, unhealthy parentage.

5. The occurrence of pneumonia is also produced by agencies as yet unknown, not to speak of injuries and like circumstances.

To so-called "catching cold" as a predisposing cause, only an unimportant part can be assigned, since very few children suffer from pneumonia, although exposed to the external air. This view has led to the practice, especially among those in better condition, of entirely withdrawing children from the open air during winter. The mischief of this first becomes manifest to the parents when the child, attacked with pneumonia in spite of the precaution, is unable to resist the disease.

These are the cardinal points in the etiology: if we give sufficient attention to them, we shall perhaps be able to prevent the very great prevalence of pneumonia in children.

As regards prognosis, I may say that it is better *quoad vitam* than *quoad valetudinem integram*: that is, more children remain alive after inflammation of the lungs than in the possession of perfect health. This is indeed a cloudy prospect: but practice everywhere confirms the statement. My cases give evidence in proof of it, and I could adduce other facts in its support from the history of earlier cases.

Of the 59 children discharged, I have already found that 18 are affected with chronic pneumonia. Many of them that remained, I had not had an opportunity of examining since they recovered from the pneumonia. Of the 59, 10 had a second attack of pneumonia within a year, an occurrence which unfortunately is not rare.

Among my patients, there were 9 cases of double pneumonia. It is indeed asserted that this occurs more frequently in children than in adults. Right-sided pneumonia occurred in 26 cases: and I can testify that, *ceteris paribus*, it is somewhat more severe than left-sided pneumonia. The prognosis in secondary inflammation is always bad.

Regarding the pathological appearances, I will only say that they differ from those of the pneumonia of adults, in that the pneumonia is not in general lobar but lobular—occupying limited portions of the lung, between which healthy tissue is found. Lobar pneumonia is rare.

I turn now to the commencement of the disease. It is often suddenly ushered in by a bronchial catarrh, or without this. In older children, the



initial stage begins with a rigor, or with paleness and trembling, or even with paroxysms of convulsions. The respiration is frequent, the inspiration interrupted, the expiration groaning. The temperature is 102° to 104° Fahr., with slight remissions. The pulse is generally large and frequent. The physical diagnosis is attended with great difficulty on account of the crying of the child. The sputa are wanting; and in their absence one sees how necessary they are for an exact diagnosis. The peculiar character of the respiration, however, makes the diagnosis more certain. The respirations are 60 to 80 in a minute, and the accent fully on the expiration, not, as otherwise, on the inspiration. Very active contractions of the diaphragm are evident. In more severe phases of the disease the facial muscles participate, and the *alæ nasi* are worked. The quick, short, superficial breathing is an important sign; as is also the reddened and partially cyanosed face.

Percussion, of course, gives a negative result in the lobular form of the disease, but reveals dulness in the lobar form. We must not allow ourselves to be deceived when, in a crying child, the respiratory tension, affecting the chest-wall, reveals dulness, which disappears with the commencement of inspiration. When dulness remains during both inspiration and expiration, pneumonia is truly present. According to Niemeyer, the resistance should also be tested. Percussion should not be done too violently, nor at only a few points.

Auscultation in children is performed either directly with the ear, or by means of Voltolini's stethoscope, with which the movements of the child can be most easily followed.

I saw severe cerebral symptoms in five cases, with disease of the upper lobes. The typical course of pneumonia is similar in children and in adults. The principal causes of death are: 1, febrile exhaustion; 2, severe bronchial catarrh on the unaffected side; 3, extensive hepatisation; 4, complications, of which intestinal catarrh is the most dangerous in children. They have very short breath, are unable to suck, and are frequently attacked with convulsions. It is not easy to confound the disease with atelectasis, as this disorder is unattended with fever. The vocal resonance affords the means of diagnosis from pleurisy.

With regard to treatment, I will bring no remedy prominently forward, but describe the method which I have followed. I have followed Jürgensen's advice in the treatment of pneumonic children, and have no reason to regret having done so. During the height of the fever, as is generally the case, the work of the heart is increased. We must, therefore, before all other things, put the heart in a condition which will enable it to perform its work. According to Jürgensen, prevention of failure of the heart's action takes the first place in the treatment of pneumonia; he asserts that death in this disease is the result of insufficient cardiac action. After this, the fever is the first object of therapeutic action; with the abatement of the fever, the strength of the patient is also generally reduced. The thermometer does not aid us much in these cases, but the pulse is more to be depended on. The first requirement is coolness and fresh air. Cold baths can only be used to reduce the temperature, if stimulating measures be employed before and afterwards. It must be remembered that the organism cools sooner in children than in adults. The pulse must necessarily be the guide in the adoption of these measures. The most valuable remedy in pneumonia is quinine: it quickly reduces the temperature without weakening the heart. Digitalis

rapidly weakens, and is only to be given with caution. Leeches must be avoided as far as possible. I have not used them in any of my cases. Quinine is given to children under five years in doses of  $1\frac{1}{2}$  grains for each year of life; to older children, in somewhat larger doses.

As regards the diet, the children may be allowed the mother's breast as milk; in older children, broth may be added to the milk. I give to children affected with pneumonia, in quantities proportioned to the age, Bordeaux wine, generally with soda-water; the temperature falls rather than increases under the use of alcohol.

The sleeplessness of pneumonic children is best obviated by antipyretic means (cold wrappers, quinine), and only when constipation is present, should the use of quinine be interrupted by some doses of calomel.

When the dyspnoea becomes severe, an emetic is indicated; if symptoms of collapse appear, wine is the best remedy, and, in more severe stages of collapse, musk, which acts more quickly than camphor. During the stage of convalescence, mild preparations of iron should be given.

#### WITKOWSKI ON THE MODE OF COMMENCEMENT OF VARIOUS FORMS OF INSANITY.

In the *Berliner Klinische Wochenschrift* for Dec. 11th, 1876, Dr. Witkowski, of Strassburg, has published an excellent paper, which is especially intended to controvert the theory that all or most forms of insanity are preceded by a melancholic stage of invasion.

Before commencing to deal with his subject, the author tells us that interest in the simplest questions of clinical psychology is daily declining, and it is, therefore, the duty of those concerned to stimulate research and, above all, to furnish new facts towards their solution.

It would seem that the *matériel* afforded by the lunatic wards of the *Bürgerspital* offers excellent opportunities for observing the mode of commencement of the various psychoses; it consists almost entirely of recent cases which are admitted to the hospital on a system which obviates the delays usually due to formalities, and the patients are drawn nearly exclusively from the town and its neighbourhood, thus facilitating the physician's task of obtaining full and accurate histories. Witkowski's conclusions result from an analysis of 85 cases, carefully selected from 150 which he observed, the remainder not being available, as all the circumstances of their commencement were not accurately known. Histories of the cases are not given, being considered unnecessary, but the author tells us that, having read over the numerous cases given in text-books, he does not see that they in any way contradict his opinions; what has been wanting in them is not exact observation, but systematic classification and a just appreciation of the facts.

Guislain first put forward the statement that insanity, almost without exception, began as melancholia, in support of his view that it had its origin in altered psychic sensation. Griesinger accepted and supported Guislain's statement, but used it to strengthen his theory that all forms of insanity were phases of one and the same process. This became the generally accepted view throughout Germany, and was most vigorously championed by H. Neu-

mann. In this way violence was done to facts, and further clinical research prevented. In 1865 Snell led the way in dividing forms of insanity one from another; and Griesinger, in 1867, publicly taught the new doctrine, but was prevented by death from inserting it in his *Lehrbuch*.

Among the 85 cases considered, 20 (15 m., 5 f.) were general paralytics; and of these only two men (*i.e.*, 1 in 10) showed symptoms of depression at the commencement of the disorder; this result, however, takes no account of the cases of "secondary paralysis," lately described by Holstermann. Of the 65 remaining cases, 52 are women, and 13 men, classified as follows:—

	M.	F.	TOTAL
Melancholia .....	7	12.....	19
Mania .....	2	15.....	17
Verrücktheit (fixed delusions without depression or excitement) ...	3	23.....	26
Dementia .....	1	2.....	3
	13	52.....	65

And of these there began,

	M.	F.	TOTAL
With symptoms of depression .....	8	29.....	37
Without " " .....	3	25.....	28

*i.e.*, nearly one-half of all the pure psychoses began entirely without depression. All the 19 cases of melancholia began as such; therefore, of the remaining 46 cases of other forms of insanity, only 18 (males 3, females 15) began with depression, and 28 (males 3, females 25) without; *i.e.*, only a little over one-third of the patients who did not eventually remain melancholic were so at first. These cases are divided among the various forms of insanity, thus:—

Commencing	with depression.			without depression.		
	M.	F.	TOTAL	M.	F.	TOTAL
Mania .....	0	3.....	3	2	12.....	14
Verrücktheit.....	3	11.....	14	0	12.....	12
Dementia.....	0	1.....	1	1	1.....	2
	3	15.....	18	3	25.....	28

Of the cases of mania, therefore, only a little over one-fifth began with melancholy; in two out of the three which did so, the depression lasted only a few days, but the third patient was strongly melancholic for a whole winter antecedent to the violent mania, which has now lasted  $1\frac{1}{2}$  years. In the single case of dementia, with depression, the author considers that the dementia existed from the first, progressing rapidly side by side with the melancholia, to which it could not thus be called secondary; the patient was also the subject of various delusions. There remain the cases of so-called Verrücktheit, of which 14 began *with* depression and 12 *without*; from this point Dr. Witkowski proceeds to discuss pretty fully these two classes of this form of mental disorder.

Verrücktheit means simple delusional insanity without either maniacal or melancholic symptoms; it was long believed to be always secondary to some other form of mental disease, but since Griesinger, in 1867, described "primary Verrücktheit," much attention has been given to the subject by W. Sander, Samt, and others, so that its occurrence as a primary disease is now thoroughly recognised. Nevertheless, primary uncomplicated delusional insanity is still regarded as a rarity; the author shows that it is not so, for all his twelve cases of Verrücktheit, which

commenced without depression, failed also to exhibit any maniacal symptoms, and were therefore primary cases of simple delusional insanity. In them, delusions, with or without hallucinations, were quickly or gradually developed, without any noticeable emotional disturbance. The number (12) of these cases constitutes nearly one-fifth of the total pure psychoses (65) which were observed, thus showing that they are anything but rare, and entitling them to a place in asylum statistics, which has not hitherto been assigned them.

The author attaches even greater importance to the fourteen cases of Verrücktheit which exhibited symptoms of depression at their commencement. He regards the delusions or hallucinations as the essential feature in these cases, and the depression as an accidental and temporary accompaniment. These cases, he says, are generally described at first as "melancholia with delusions," or "with hallucinations," and then, after the lapse of time, the delusions remaining as before, they come to be looked upon as cases of secondary disease. This mode of regarding the subject arises from the old idea that delusions are developed directly from emotional depression (psychic pain), and remain behind after the melancholy has passed away. But Griesinger had already pointed out the error of this view, some of his reasons being that (1) Delusions and hallucinations sometimes arise entirely without emotional disturbance; (2) Their number and intensity is by no means in proportion to the amount of depression or exaltation, when the latter are present; indeed, delusions, etc., are often entirely absent where the emotional faculties are most affected, and a certain mental quietude is always necessary to the formation of really fixed delusions; (3) Frequently no connection exists between the delusions and the state of the patient's feelings; large delusions often accompany a melancholy condition, and still more frequently delusions of persecution, etc., accompany maniacal exaltation. Witkowski adds that in many cases the first delusions preceded the depression, just as periods of melancholy in the further course of the disease are common occurrences. He proposes the terms "melancholic" and "maniacal Verrücktheit" to designate those cases of primary delusional insanity, in which the affective faculties are at the commencement depressed or exalted: the latter would be much more rare than the former. The prognosis in all these cases is grave, but rather better in the cases where some depression or exaltation has been present than where there has been none.

The author concludes by giving a few reasons explaining how it is that the erroneous belief in a melancholic invasion-stage for all psychoses was so long and so generally accepted.

1. The struggles of many patients with the outer world, the oppressive feeling of "not being themselves," their diminishing capacity for work, the sleeplessness, the terrifying hallucinations and illusions, and lastly the being taken to an asylum, often naturally cause depression, which is, however, not a part of the disease, or is, at any rate, only secondary, and generally rapidly disappears in a well-ordered asylum. Most of the above-cited cases of "melancholic Verrücktheit" belonged to this class.

2. Cases of primary dementia (including paralytics) often closely resemble melancholia, and may give rise to mistakes. Such patients remain still, and do not speak or move, owing to their lack of thought and volition, but a true depression may ensue if they become conscious of their own condition.



3. A stage of depression and lassitude precedes many bodily diseases; and if this be called melancholia, this condition must be considered as being often present at the commencement of typhoid and other fevers.

4. In many of the cases on which earlier theories were based, the history of the commencement was wanting; Griesinger admits this in his *Lehrbuch*, and yet, guided by the old views, assumes that the patients described had previously passed through a stage of melancholia. Conclusions based on such assumptions fall at once before a few facts.

From a medico-legal point of view, it is important that it should be known that insanity may exist without a previous period of depression, and also that the coming-on of delusions and hallucinations without maniacal or melancholic symptoms is one of the recognised forms of insanity.

[The number of cases on which the above results are based is comparatively small, but sufficient to prove the author's point as to the non-frequency of melancholia at the commencement of insanity, and to direct attention to simple delusional insanity as an important primary disease. If we adopt his views, many cases now described as "melancholia with delusions" would have to be called "delusional insanity with depression," and cases in which delusions or hallucinations are unaccompanied by either depression or maniacal symptoms would no longer be returned as "mania."—*Rep.*]

CHAS. S. W. COBBOLD, M.D.

## MARTIN ON THE RELATIONS OF ALBUMINURIA AND PREGNANCY.

At a meeting of the Medical Society of the County of Kings, on November 21st, 1876, Dr. W. H. Martin read a paper on the Relations of Albuminuria to Pregnancy. His purpose was to relate a case in illustration of the following propositions.

1. Pregnancy in its earliest stages may induce albuminuria.

2. Inasmuch as this effect is apparent long before the uterus is sufficiently enlarged to interfere, by its size, with the renal circulation, the influence of pregnancy in producing albuminuria must be vital and not mechanical.

3. In some cases the death of the ovum, even before its removal from the uterus, will relieve uræmic symptoms that had previously been severe and progressive.

In October, 1871, Mrs. — was attacked, at the end of the eighth month of her third pregnancy, with uræmic convulsions. She was delivered of a living child by the late Dr. H. S. Smith, and, although for a time in an apparently desperate condition, made a perfect recovery. The albuminuria had been recognised early. In *five* weeks from the delivery the urine was normal and the lady perfectly well.

In April, 1873—having passed a single period only—Mrs. — consulted Dr. Smith for relief from distressing headache, disturbances of vision, nausea, etc. Discovering albumen in the urine, he applied the usual remedies without benefit; and, as he refused to interfere further at this early period, she went to some quack in New York city, who introduced a stiff sound into the uterus once every week for seven successive weeks. The first application was attended with slight hæmorrhage, and followed by a watery flow which lasted some hours. The other applications had no result of any kind, except the seventh,

which was followed by violent hæmorrhage, and the next day she was delivered of what Dr. Smith considered a three-months' fœtus. After the *first* application of the sound, the symptoms disappeared, so that for five weeks previous to her delivery she felt almost well. Albumen and casts had disappeared from her urine the first time that Dr. Smith examined it after her recovery.

She remained perfectly well and perfectly regular until May, 1875, when she missed a period. Albumen appeared in the urine, and she suffered from headache and nausea to such an extent, that Dr. Smith, after consultation, resorted to the use of the sound, and in June, relieved her of what he pronounced to be a *two*-months' ovum. Although she had severe flooding, she recovered thoroughly and rapidly. The examination of the urine, in which Dr. Smith was assisted by Dr. Segur, showed a perfect restoration to the normal at the end of three weeks.

Mrs. — continued well, and menstruated regularly up to May 24th, 1876. She missed in June, and during July was feeling very badly. By the first of September she presented the following symptoms: severe and persistent headache, frontal and occipital; muscæ volitantes and bright flashes interfered with vision; and the outline of objects seemed so indistinct, that she could read but few minutes at a time. There were present also, insomnia, total anorexia, almost constant nausea, and a general nervous irritability which made her absolutely wretched. Dr. Martin thought he could detect a slight puffiness of the lower eyelid and fullness behind the ankle-joint, but if œdema did exist it was very slight. She was passing large quantities of urine of a sp. gr. of 1010. Dr. Segur examined it on the 18th, and found albumen over one-eighth, and numerous granular and hyaline casts; no blood-corpuscles. Her symptoms grew worse in spite of treatment, and she begged earnestly for relief. On the 25th, Dr. Martin introduced a flexible sound to the fundus, a depth of three and one-half inches; a little watery fluid, tinged with blood, followed its withdrawal. No other result ensuing, the sound was used again on the 27th and on the 29th. On October 1st, a small carbolised sponge-tent was introduced into the cervix and allowed to remain twenty-four hours. On October 5th—nine days after the first introduction of the sound—Dr. Segur examined the urine carefully, and found but one granular and comparatively few hyaline casts. Heat and nitric acid produced a very light cloud of albumen which settled at the bottom of the test-tube. The urine was passed less frequently and less copiously; sp. gr. 1013. Mrs. — had almost no headache after the 26th, was out every day, and called herself well. All this time there was no discharge from the vagina, and no pain, and it was not until the 15th of October, twenty-one days after the first introduction of the sound that the uterus attempted to expel its contents. On the evening of the 15th hæmorrhage commenced, and continued so profusely that, after applying a tampon with persulphate of iron, Dr. Martin called Dr. Skene to his assistance; and, on the next morning he removed the contents of the uterus with the curette. The ovum escaped detection, although looked for with great care. The sac which contained it was examined by Dr. Segur, who found everything normal except that the villi of the chorion were less prominent than usual, the attached surface appearing to the naked eye almost smooth; there was no fatty degeneration. Mrs. — had a rapid and uninterrupted recovery. Just two weeks after having been for hours in a con-

dition such that the slightest movement produced syncope, she went to the Centennial Exhibition at Philadelphia, where she remained some days. Her urine—examined on the 25th, ten days after the womb had been emptied—showed no trace of albumen, and Dr. Segur was able to discover only a few hyaline casts. Examined again on November 21st, it contained no albumen and no casts.

In commenting on this case, Dr. Martin made the following remarks.

1. That pregnancy was the sole cause of albuminuria in this case seems indisputable. Mrs. — is certainly not the subject of Bright's disease. Examination of the urinary deposits fails to give evidence of either inflammatory changes or of fatty degeneration of the kidney. Her general condition—one of perfect health, as far as can be discovered—would seem to indicate that her kidneys must be rarely perfect in structure to have successfully resisted the *four* separate invitations to disease by which they have been visited. She is almost reckless in exposing herself to wet and cold, and often alternates weeks of sedentary occupation with days of excessive and fatiguing exercise. And yet there have been no variations in her history from the strict level of health, except during her pregnancies. She has told me that the only sickness she has had since childhood was an attack of bronchitis. Again, it may be worth while to note that, if what the books tell us be true, namely, that latent Bright's disease predisposes its pregnant victims to abort, she should have evidenced a tendency to abortion, instead of offering such extreme resistance to its induction. The albuminuria began with each pregnancy, and ceased with its arrest. The only question, therefore, that could be raised, is as to the existence of some other cause coincident and concurrent with pregnancy, and yet independent of it. The existence of such a cause, if not impossible, is certainly incapable of proof. It may, then, be fairly inferred from this case that pregnancy, before it has advanced two months, can and does produce albuminuria.

2. The *fact* of causation being proved, the question as to the *mode* of causation must be met. Why and how does the presence in the uterus for less than two months, of a fertilised ovum, alter the function and structure of the kidney to such an extent as to determine the appearance in the urine of albumen and casts? (The development of so-called uræmic symptoms, as it depends upon alteration of the kidney function, however produced, opens a different question, which has been successfully investigated.) In studying the way in which pregnancy produces albuminuria, we are compelled to leave the open field of fact and proof, and to enter the misty region of theory and inference. In the first place, recorded observations as to the earliest period at which albuminuria has been detected, are very few; moreover, the belief that it does not appear until the pressure of the enlarged uterus upon the venous circulation affords an apparently easy explanation, is so general, that I have looked almost in vain for assistance from authorities on obstetrics. I find little evidence that the occurrence of albuminuria before the fourth month of pregnancy has ever been recognised except as a result of original pre-existing disease of the kidney. And yet, while these writers speak of the pressure of the uterus as the most *obvious* solution of the phenomena of albuminuria, some of them refuse to accept it as the only and inevitable explanation; and refer, for the most part vaguely, to the possible existence of other causes as potent as pressure.

The diseases which are now known to be attended by albuminuria are so numerous, and pathologically so distinct, that we are puzzled in the endeavour to make analogy and comparison useful in testing the causative influence of pregnancy. It is hard to believe, for instance, that the conditions under which albuminuria is produced by valvular diseases of the heart on one hand, and by diphtheria on the other, are identical, or even similar. That scarlatinal poison and that pregnancy both cause albuminuria is proved; but that both cause it by originating exactly the same kind of disturbance eludes demonstration. It is rather a "begging of the question" to assert that each produces changes in the blood, and that it is useless to seek beyond these wholly indeterminate changes for a mode of causation. It is easier to suppose that each disease, or each group of diseases (if they can be grouped etiologically or otherwise) has a peculiar power, and exerts it in a peculiar way, than it is to suppose the existence of some one essential condition to which all equally give rise; *i.e.*, one single and immediate cause of albuminuria. Let us try to discover what there is in pregnancy by itself which excites the kidney to the production of albuminuria.

When an ovum is fertilised, a profound impression must be made upon the nervous centres which preside over the processes of nutrition. The rapid and complex growth of the fetus; the establishment of a new vascular system (as it may be termed) for its support; the remarkable development of the uterus to make it serve as a suitable home for its growing infancy, and an efficient means of expulsion at its maturity, demand large applications of nutritive force. The medium through which these impulses are transformed into actions is the great sympathetic nerve. The first steps toward any change of nutrition are accomplished by the agency of the vaso-motor nerves. The blood being ready to furnish material, the capillary circulation must be made ready to take it up. And this condition of excitation must be maintained by the action of the sympathetic nerves during the whole time that an extra supply is needed. Anatomists tell us that the uterus is supplied with organic nerves from the spermatic plexus; they tell us also that the spermatic plexus is derived chiefly from the renal plexus. With this close anatomical relation is there not also a close physiological and pathological association? The impulse sent forth by the common nerve-centre over one set of nerves to one organ may sometimes react and send a similar impulse through another set of nerves to another closely related organ. A sort of internal reflex action may in this way be propagated from the uterus to the kidney.

The uterus and the kidney are certainly "associated organs"; and it is, therefore, at least probable, that an influence derived from the unusual nutritive activity in the uterus may be reflected from the nervous centre through the renal nerves; and being continuous, may stimulate or alter the interstitial circulation of the kidney in such a way as to produce albuminuria.

3. The history of the case detailed presents the following testimony in favour of the third proposition. In two different pregnancies uræmic symptoms, which had been severe, disappeared almost immediately after the use of measures to destroy the ovum. In both cases there was an interval (in one of five weeks, in the other of twenty-one days), between the operation and the removal of the contents of the uterus: and yet the signs of albuminuria diminished



as rapidly *during* this interval as they did after it. It seems evident, therefore, that the albuminuria depended upon the *life* of the ovum, not upon its mere presence, and certainly not upon the size of the uterus. As soon as the ovum dies, the increased activity of nutrition demanded for its growth is no longer needed; and, as nature is rarely wasteful of her powers, the nerve-impulse to activity is no longer given. When direct action ceases, reflex action, which is born of it, must cease also; and the albuminuria ends with the process by which it was excited. For these reasons, then, I find it easy to believe that the death of the ovum puts an end to the albuminuria.

### THE METRIC SYSTEM IN PRESCRIPTIONS.

It is often very convenient for physicians in reading foreign books to have at hand a convenient table of the equivalents in the metric system of quantities in common use in the English system of weight and measure. The following table is prepared by Mr. Daliber (*Boston Journal of Medical Science*.)

*A Table for Reducing Troy Weight to Grammes.*

Troy Weights.	Gramme Weights.	Troy Weights.	Gramme Weights.
Grain $\frac{1}{10}$	.006	Grains 80	5.18
" $\frac{1}{8}$	.008	" 90	5.83
" $\frac{1}{6}$	.011	" 96	6.22
" $\frac{1}{4}$	.016	" 100	6.48
" $\frac{1}{3}$	.022	" 120	7.75
" $\frac{1}{2}$	.032	" 150	9.72
" 1	.065	" 160	10.37
" 2	.13	" 180	11.66
" 3	.19	" 200	12.96
" 4	.26	" 240	15.55
" 5	.32	Drachms 6	23.3
" 6	.39	" 8	31.1
" 8	.52	" 10	38.9
" 10	.65	" 12	46.6
" 12	.78	" 14	54.4
" 15	.97	" 16	62.2
" 16	1.04	" 20	77.7
" 18	1.17	" 24	93.
" 20	1.29	Ounces 4	124.
" 24	1.55	" 5	155.
" 30	1.94	" 6	186.
" 36	2.33	" 7	217.
" 40	2.59	" 8	248.
" 50	3.24	" 9	279.
" 60	3.89	" 10	311.

*Table for Reducing Fluid Measure to Cubic Centimetres.*

Fluid Measure.	Cubic Centimet.	Fluid Measure.	Cubic Centimet.
Fluid Drachm $\frac{1}{2}$	1.84	Fluid Ounce 2	59.
" 1	3.69	" 3	89.
" $1\frac{1}{2}$	5.53	" 4	118.
" 2	7.38	" 6	177.
" $2\frac{1}{2}$	9.22	" 8	236.
" 3	11.07	" 10	295.
" 4	14.76	" 12	354.
" 5	18.4	" 16	472.
" 6	22.1	" 20	591.
" 7	25.8	" 24	709.
Fluid Ounce 1	29.5	" 30	886.
" $1\frac{1}{2}$	44.3	" 32	944.

### ANATOMY AND PHYSIOLOGY.

FRÉDÉRICQ ON THE HARMLESSNESS OF PROLONGED CONTACT OF ATMOSPHERIC AIR WITH THE HEALTHY PERITONEUM.—Dr. Léon Frédéricq contributes a paper, giving the results of experiments in support of the above proposition, in the *Annales et Bulletin de la Société de Médecine de Gand*, for November 1876. The author reviews the generally received opinions of surgeons on the danger of admitting air into serous and synovial cavities, and states that the object of his investigation had been to discover wherein the hurtful qualities lay, whether in the component gases, in the physical conditions, or in the dust organic and inorganic; for it had been advanced by Cohnheim that the frog's peritoneum regularly inflamed in a few hours when exposed to unfiltered air; and Zahn had produced inflammation and suppuration by sowing the surface of the peritoneum with the "microsporon septicum" of Klebs, while nothing occurred with air previously deprived of its floating particles.

Dr. Frédéricq was arrested on the very threshold of his investigation by the fact that, in his experiments, the unfiltered air of a physiological laboratory might be passed with impunity into the abdominal cavities of guinea-pigs and rabbits, though the stream of air was in some cases continued for eleven hours. Superficial, as well as microscopic, examination by the silver method, showed no sign of pathological change.

The author publishes this negative result in confirmation of the recently expressed views of G. Wegner, *Chirurgische Bemerkungen über die Peritonealhöhle* (*Archiv für Klin. Chirurgie*. 1876. Bd. xx). In the only experiment which is given in detail, 28.5 litres of unfiltered air, at a temperature of 14° Cent. (57.2 Fahr.), under varying pressure, were passed through the abdominal cavity of a rabbit at a rate of 2.5 litres per hour. The animal was killed and examined on the third day after the operation.

BUSHELL ANNINGSOON.

SCHÄFER ON THE EARLY DEVELOPMENT OF THE MAMMALIAN EMBRYO.—Mr. E. A. Schäfer has contributed a valuable paper on this subject to the *Proceedings of the Royal Society* (No. 168). In the examination of ova, obtained from the cornua uteri of a cat, he has detected an extremely fine membranous pellicle lining the outer surface of the hypoblast in that thickened area where epiblast and hypoblast nearest approximate to each other, and are separated also by a minute portion of granular coagulated fluid. For this pellicle the term *membrana limitans hypoblastica* is proposed. It is stated to be slightly stained by carmine, but not at all by logwood, and may probably be regarded as a cuticular formation from the hypoblastic cells. Whether it is co-extensive with the hypoblast throughout is a matter Mr. Schäfer has been unable to determine. Should this pellicle be found of general occurrence in mammalian germs, the development of the mesoblast from epiblast would be rendered far more probable than the assumption which refers it to a hypoblastic origin.

MOSELEY ON THE COLOURING MATTERS OF VARIOUS ANIMALS.—An extensive series of observations upon the colouring matters of Invertebrata by spectroscopic examination, have been made by Mr. H. N. Moseley during the voyage of H.M.S. *Chal-*

lenger, and are recorded in the last number of the *Quarterly Journal of Microscopical Science*. The sponges, alcyonarians, zoantharians, echinodermata, worms, crustacea, and mollusca all received due attention; but more especially in all highly coloured species which yielded a spectrum with absorption-bands of a characteristic nature. Mr. Moseley has thus been able to greatly increase our list of recognised animal colouring matters. Thus from a large series of simple stony corals, together with two forms of Actiniae and certain Hydroids, a madder-red colouring principle was obtained, which he terms polyp-erythrin, giving a most characteristic spectrum with those well-marked absorption-bands which are greatly modified by dilution of the solution used; this pigment is extremely stable.

Amongst the echinoderms a colouring principle of an intense pink (in solution) was termed Pentacrinin, being found alone in the genus *Pentacrinus*; its spectrum also characterised by those absorption bands, one of which, of an intense black, covers the line D of the solar spectrum. These bands are greatly modified in appearance by the amount of acid used in the solution. The above pigments, together with a red and blue principle obtained from two large species of Rhynchodemus, were insoluble in alcohol, and required acids or acidified alcohol for their solution. Amongst other pigments more or less freely soluble in alcohol, the writer enumerates antedonin, hoplacanthinin, crustaceorubrin, aplysiopurpurine, and ianthinin. A large number of the coloured species of *Antedon* were examined, but, with the exception of a dark purple species taken off Cape York (Australia), no spectrum with characteristic bands appeared; such was also the case with several new species of deep-sea *Hymenaster*. The deep-sea decapods, in several instances, yield an oily red colouring matter soluble in alcohol and giving a spectrum with one broad absorption-band in the green and blue, identical apparently with the principle afforded by the red coloured surface entomostaca. A most interesting account is given of the well-known pigments of *Aplysia* and *Ianthina* which give spectra with well-marked absorption-bands; these pigments are remarkably evanescent. After stating that those colouring matters are the more complex which absorb certain isolated areas of the visible spectrum, Mr. Moseley proceeds to discuss briefly the benefit accruing to the species from these complex colours and the phenomenon of albinism. Some very interesting remarks are made regarding the deep-sea animals, and Professor Wyville Thompson and Dr. Carpenter are quoted with respect to the source of light at great depths being probably dependent upon phosphorescent animals. A spectroscopic examination of this phosphorescence in three species of deep-sea Alcyonarians revealed only red, yellow, and green rays; hence, if the luminosity of these great depths were dependent on these rays, blue and violet colours would not be apparent. In support of this assumption, it is interesting to remark that almost all deep-sea shrimps and schizopods are of a bright scarlet tint, and no blue animals were obtainable at these depths.

BEVAN LEWIS.

CHIRONE ON THE THEORY OF DOUBLE MUSCULAR ACTION.—In an article in the *Rivista Clinica di Bologna* for October and November, Dr. Chirone discusses the debated question whether the cardiac diastole and dilatation of the arteries are due to muscular action, and points out that none of the existing theories are capable of explaining all the

facts connected with these phenomena. Among other things, he holds that the rhythmical contraction in the arteries, adduced by Legros and Onimus to explain active hyperæmia, is not the cause but the effect of an increased afflux of blood.

Dr. Chirone holds that smooth muscular fibre is endowed with double action. He believes that its fibres are composed of primary elements of an ovoid form, arranged in the muscle at rest in a parallel direction somewhat obliquely. When these elements undergo rotation in the vertical direction contraction takes place, with shortening and enlargement in bulk of the muscle. When, on the other hand, their rotation brings them into a more oblique direction, then elongation and extension take place.

The existence of these primary elements has been demonstrated by Dr. Engelmann, who has clearly shown them in the form of movable ovoid elements arranged close together.

With this double muscular action are connected two series of nerves—contractile and extensile. Thus the heart, vessels, intestine, and uterus have both dilator and constrictor nerves. In like manner some agents, such as the poison of the toad, atropine, and cold, promote contractility, while others, such as quinine, chloral, nitrite of amyl, and heat, favour dilatation.

With the aid of muscular extension, the author explains many facts. Strong stimulation of the vagus nerve prolongs the diastole; stimulation of the central end of a divided nerve, such as the sciatic or the cervical sympathetic, produces dilatation of the vessels, first on the opposite side and then general; excitement of the chorda tympani produces hyperæmia of the submaxillary gland, with increased secretion; stimulation of the vagus dilates the intestine, &c. These acts of dilatation cannot be completely explained by any other theory, either by paralysis or by some obscure action, or by autonomic rhythmic contraction of the arteries.

A. HENRY, M.D.

WOLKENSTEIN ON THE EFFECT OF IRRITATION OF THE SKIN UPON THE SECRETION OF THE KIDNEYS.—Dr. Wolkenstein of St. Petersburg describes, in the *Centralblatt für die Medicin. Wissenschaften*, No. 31, 1876, the result of experiments made by him on the effects of the application of irritants to the skin of rabbits. He arrived at the following result. The action of different irritants is not constant. Slight irritation (by tincture of iodine, mercurial ointment, and solutions of tartar emetic) causes only a slight albuminuria, disappearing when the cause ceases to act. No changes in the kidneys are to be found in this case. When stronger means are applied (strong acids and caustics, moxas, etc.) the animals die in convulsions (apparently uræmic). The urine contains albumen (often in considerable quantity), epithelial cells from the uriniferous canals, and sometimes cylinders. The kidneys in these cases were enlarged, and their capsule distended and easily removable. The parenchyma of these organs was of a dirty reddish colour. The uriniferous canals were filled by finely granular epithelial cells in which no nuclei could be detected; the glomeruli were observed, and, even after treatment with solution of nitrate of silver, the outline of their epithelium could not be recognised.

In all the experiments—more than fifty in number—the following phenomena were observed. The temperature rapidly rose, and remained stationary as long as albumen was found in the urine. The pulse and respiration were quickened, and the animals



became emaciated. When cantharidised collodion was used, the urine contained blood. The quantity of urine became less. Appetite and thirst were lost. There was increased excretion of urea and less of chlorides. The weight of the body decreased. There was noticed inflammatory reaction of the skin, with infiltration of the subcutaneous areolar tissue, etc.

The author explains the effect of the irritants in the following manner. The transudation of serum-albumen from the vessels into the uriniferous tubes depends either upon an increase of the blood-pressure, or upon changes in the walls of the vessels. Sometimes it is caused by a combination of both. When cantharides is absorbed by the skin it enters the circulation, and in being eliminated it produces albuminuria, in consequence of its action upon the vessels. Iodine acts in the same manner. Acids likewise probably penetrate the skin (Waldenström has proved this of carbolic acid), and produce diseases of the kidneys and vessels. Mercurial ointment also becomes absorbed and circulates as albuminates in the blood, and probably produced albuminuria in the urine, though this was not discovered, probably because it remains there for a longer period, and was probably not yet eliminated when the search was made. No doubt the other irritants must cause albuminuria, for the reason that their application was followed by fever, constantly bringing forth a morbid state of the parenchyma of the organs and vessels. Lastly, albuminuria may also be caused by a disintegration of red blood-corpuscles.

Being under the impression that the nerves of the skin exclusively become irritated by an application of the electric brush, the author performed some new experiments, applying the irritation twice daily from six to ten minutes. This was followed: (1) by an increase of temperature and a greater frequency of the pulse and respiration; (2) by an increase in quantity of urine and urea, and by a decrease of the chlorides; (3) by slight albuminuria, which disappeared after from three to six hours. When the irritation was continued seven or eight days, there was much albuminuria, which lasted six hours, even when the irritant was not applied.

#### RECENT PAPERS.

- A Contribution to the Study of Animal Temperature. By Dr. R. Bartholow. (*American Journal of Medical Science*, January.)  
 The Development of the External Ear-Passages. By Dr. D. Hunt. (*Ibid.*)  
 On the Identity of the Red Blood Corpuscles in different Races of Mankind. By Dr. J. G. Richardson. (*Ibid.*)  
 A New Method of Double Staining. By Dr. W. F. Morris, and Dr. E. O. Shakespeare. (*Ibid.*)

#### PATHOLOGY.

##### BIANTE ON GENERAL PARALYSIS AS A PREDISPOSING PATHOLOGICAL CAUSE OF FRACTURE.

—M. Biante records an observation of a complex fracture of the humerus in a general paralytic (*Annales Médico-Psychologiques*, Nov. 1876). The recent communication of M. Le Dentu to the Surgical Society on a rare variety of fracture of the superior extremity of the humerus, and M. Broca's article in the *Gazette des Hôpitaux* on pathological fractures, induced M. Biante to give the following observation of an ordinary case of fracture of the shaft of the humerus, but more complete than usual, and complicated by several incomplete fractures, whose cause

was found in the nature of the bone itself. On Feb. 1st, 1876, a patient in an asylum sustained a fracture of the humerus, which we shall denominate a comminuted fracture. A necropsy was made at so early a date after death as to leave the fracture in almost the same condition as when it occurred, for the patient, being well advanced in general paralysis, died soon after the injury. Although it does not present the same character as M. Le Dentu's case, yet it is interesting from many points of view, and we have felt it desirable to call attention to a pathological condition which all mechanical considerations apart seems to rest upon the general physiological conditions which follow as consequences of vaso-motor degeneration. The patient died of coma on the third day. At the *post mortem* examination, the right shoulder was much swollen, and there was considerable ecchymosis over the deltoid. On reflecting that muscle, considerable extravasation of blood was found in the intermuscular spaces. There was seen to be a very elongated oblique fracture of the shaft, and also a second fracture separating the surgical neck from the upper fragment; the medullary substance of the bone presented the appearance of a bloody pulp, as seen on drawing the fragments apart. There were two radiating fissures in the upper fragment to the outer side of the bone, which, however, had no point of departure from the other fracture. For this reason, the fracture is spoken of as being complex rather than comminuted. As the main fracture of the shaft split the bone obliquely, leaving the point of the superior fragment at the insertion of the deltoid, and the point of the inferior fragment near the surgical neck on its axillary surface, these lozenge-shaped fissures were situated in the base of the upper fragment. This case would almost have been identical with that of M. Le Dentu, had these fissures been the direct effect of external violence. The fall in this case was simply on the shoulder, and could not involve the same force as a fall from an elevated position. We must therefore conclude that, if the patient had not been a general paralytic, the lesions would not have been so severe. The cause was quite inadequate to produce so severe a result if the subject were healthy. A few days before a general paralytic made a false step, and being unable to save himself, fell to the ground, fracturing the left tibia at the junction of the upper with the middle third, and not involving the shin, contrary to what generally happens in this kind of injury.

Among general paralytics, the alterations of the great sympathetic induce disorders in the majority of organs, changes which border upon fatty degeneration or other modifications of their tissue-elements.

The bones are not exempt from this general affection: we have examined many bones of these subjects with the microscope, and have found in the medullary spongy and compact portions alterations consisting in a proliferation of adipose tissue and of fat-globules running through all parts.

The compact tissue in some parts is thin beyond measure, and, compared with the same bone in another subject, presents considerable differences. Indeed, the bones have in all their parts the aspect of those which are the subject of osteitis, but without increase of vascularity. Yet the morbid process is not of the same nature, as in this case there was neither inflammation nor suppuration, but simply a slow process of destruction without power of repair, and formation of necrobiotic elements, progressive diminution allying itself intimately with central vaso-motor

changes. And it is these phenomena which induce one to pause before venturing upon an operation in a patient the subject of them. To touch a general paralytic patient surgically, may give the final blow and prove fatal. But while citing pathological anomalies, which militate against recovery in general paralysis, we must also cite cases where recovery has taken place. The fracture of the tibia consolidated after two months' treatment. The same patient had sustained a compound comminuted fracture of both bones of the right leg four years before his admission. There had been no union, and there were many fistulous passages, so that amputation had at last been considered necessary when the mental affection had rendered his being sent to the asylum absolute. It was thought, however, best to leave it to nature, amputation being undesirable in such a subject; and nature proved a good mother in this case, for in seven months he was walking about. This favourable result was, however, quite an exception. To conclude, we think that we are right in saying that the fracture of the humerus would not have occurred, except in a general paralytic, and that general paralysis is essentially a disease of disorganization, attacking all the tissues of the economy, and substituting for their proper elements other heterogeneous elements. Hence the bones attain an anomalous predisposition to fractures, from causes inadequate for their production under ordinary circumstances.

CHARLES ALDRIDGE, M.D.

**HALLOPEAN ON GLOSSOPLÉGIA FROM LESION OF THE PONS VAROLII.**—In a recent number of the *Progrès Médical* we find a discussion between M. Hallopean and M. Joffroy on the question—whether it is possible for the tongue to be paralysed from a lesion of the pons Varolii, the rest of the brain being healthy? M. Hallopean stated that he wished to say a few words upon the question which had lately been introduced by M. Joffroy: If lesion of the pons Varolii could produce complete paralysis of the tongue comparable to those produced by lesions of the bulb where the hypoglossal nerves or their centres of origin are involved? M. Hallopean thought that he could clearly demonstrate it, by the fact that all the nervous conductors by which the bulbar centres are brought into relation with other volitional centres necessarily traverse the pons. He quoted a case of M. Guéniot, which was published in the *Bulletin* of the Society in 1860, of which the following is a summary.

X was struck suddenly with paralysis of the left side (not apoplectic) and complete loss of speech. From this time until her death, four days later, it was impossible for her to articulate a word, although the intellect was clear and she wrote correctly. The movements of the tongue were performed with difficulty, and only to a slight extent. At the *post mortem* examination, there was found in the pons Varolii a clot of blood of the size of an almond, which did not reach its inferior limits, and the rest of the brain was quite healthy. He thought this case demonstrated that a lesion of the pons Varolii can give rise (like a bulbar lesion) to a glossoplegia complete enough to absolutely destroy the power of articulation. A case of this nature would be extremely difficult to diagnose. The lesion could only be localised in the bulb, provided it ultimately produced an atrophy of the tongue, indicating that the hypoglossal nerve at its origin was directly involved (and not by its relationship with other parts of the brain). M. Joffroy remarked that M. Hallopean quoted only

one case in support of his opinion. He further stated that M. Hallopean affirmed that no case existed where lesions of the pons Varolii had produced an absolute paralysis of the tongue; for in the case of M. Guéniot the tongue was not absolutely paralysed. In fact, it was not stated in M. Guéniot's case whether there existed or not any lesion of the bulb, but it was said that in the right half of the pons Varolii there existed a clot of blood of considerable size, and also a smaller one in the left half, without facial paralysis. Alternate paralysis, which is the rule under such conditions, may have existed here, and have been incomplete on both sides, and therefore may have escaped observation. An error of this kind would explain the fact, and would lead us to expect that other errors might have existed. Again, M. Guéniot's case, should it be true, would not bring a single element to the present discussion; for it dates back as far as 1860, a period at which the nature of bulbar paralysis was little known.

M. Hallopean said that he did not think M. Guéniot's case merited such severe criticism. It had been investigated by Marcé with the greatest care, and it could not be admitted that the bulb was not examined, for it is specified that the hæmorrhagic infarct was entirely confined to the substance of the protuberance, and that the other parts of the brain were healthy. It should be considered again that there was no apoplectic seizure; that it was evidently provoked by hæmorrhage into the protuberance, and that we could not truthfully assign to any other cause the paralysis of the tongue, which was produced at the same time as paralysis of the limbs.

T. S. DOWSE, M.D.

**DENTAN ON TUMOUR OF THE BRAIN FOLLOWING AN INJURY.**—In the *Archives Générales de Médecine* for December 1876, M. Dentan, a Swiss physician, publishes the following case.

A man, about 50 years old, received, towards the end of the year 1871, a violent blow on the left side of his head by the fall of a street lamp. He was stunned for two hours, but recovered; the wound healed, and he felt no further symptoms for six weeks. He was then attacked by eclampsia, and the fits continued during the winters 1872-73, with severe headache and deafness of the left ear. The fits became less frequent, and he continued his work till January 1874, when he had a severe attack with vomiting. Another epileptic seizure occurred three days later, and returned almost every hour. While convulsed, the head and eyes were drawn to the right, the right arm was flexed and circumducted, and the right leg stretched out as if in tetanus. There were also convulsions of the left side, but the limbs were amenable to passive movement.

Five days after the severe attack, the pupils were found contracted; respiration was stertorous, the tongue severely bitten, headache and incomplete consciousness between the fits, and involuntary passage of fæces. The urine was free from albumen. The pulse was 132, and the temperature 38.8 (102.8 F.) Next day the fits became still more frequent, and the right arm seemed to be paralysed. The retinal vessels were found somewhat dilated. The temperature varied from 39.8 to 40.6 (103.6 to 105 F.) Death followed the same day.

*Post mortem*, a tumour 4 to 5.5 centimeters (1½ to rather more than 2 inches) in diameter was found adherent to the left frontal bone. It was sharply defined, involved the first frontal convolution, and



nearly reached the surface in two places, towards the median fissure, and towards the anterior fossa. It contained three cavities filled with reddish yellow fluid, was soft in consistence, and reddish grey in colour, with numerous points of hæmorrhage. Microscopically it was found to be a glio-sarcoma. The ventricles were dilated, and the ependyma slightly granular.

**SCHUELE ON MYCOSIS OF THE BRAIN.**—Dr. Schuele relates in Virchow's *Archiv*, vol. lxvii., the case of an idiot who had been for years in an insane hospital, but who had been healthy in every other respect. He became suddenly attacked with erysipelas. He had been in the habit of rubbing his nose with paper, often covered with dirty materials. Above the root of his nose there appeared a swelling, which soon spread over both eyelids and the forehead. Then pus accumulated under the swollen parts, and the scalp became oedematous. At the same time the pulse and temperature increased, and the patient became soporose. When under this state an abscess above the left upper eyelid was opened, and a large quantity of brownish matter escaped. He died about two days afterwards.

The *post mortem* examination revealed the existence of phlegmonous arachnitis with purulent phlebitis and periphlebitis of the *venæ fossæ Sylvii*, also various recent spots of softening in the corpus striatum and cortex of the brain. The vessels over large portions were varicose, and filled with bacteria. There were also larger filaments in the vessels, partly lying free, partly threaded among the aggregated white corpuscles. No branching or formation of spores could be observed. Dr. Schuele thinks that they came from the inflamed skin to the affected part of the brain by way of the vessels that supply the pons Varolii, and of the spaces in the connective tissue of the pia mater.

**KOHTS ON LESION OF THE CORPORA QUADRIGEMINA.**—Dr. Kohts, of Strassburg, describes in volume lxvii. of Virchow's *Archiv*, an interesting case of destruction of the posterior part of the corpora quadrigemina. A boy aged seven had been sick for a long period. During the first part of his illness, for ten months, the disease showed the symptoms of a spinal affection. He staggered when attempting to walk, had alternating divergent strabismus (indicating a paresis of both oculo-motor nerves), and sometimes affections of the bladder, but no pain. The second period of his sickness commenced with a fall upon his occiput. Symptoms of a tumour in the brain were now noticed. The boy suffered under intermittent pain in the back part of his head, vomited often, and showed an inclination to fall down. Optic neuritis was also detected, and he had attacks of pain with the hydrocephalic cry. No pain was noticed upon pressure of the occiput. He expired suddenly.

The *post mortem* examination revealed a tumour in the posterior part of the corpora quadrigemina, the substance of which was nearly destroyed. The tumour was only of the size of a cherry, and could, therefore, not have exercised any unusual symptoms of pressure.

The author confirms, from experiments on frogs, pigeons, and dogs, the statement of Goltz, that the optic lobes of the lower animals are the central organ for the *equilibrium* of movements.

**WASSILIEFF ON THE CHANGES IN THE BRAIN AND CARDIAC GANGLIA IN HYDROPHOBIA.**—Was-

siliëff (*Centralblatt für die Medicin. Wissenschaft.* 1876, No. 36) examined the brain and heart of a woman aged 32, who had died of hydrophobia in Botkin's clinic at St. Petersburg. The various portions of the brain, etc., were examined microscopically, with the following results. A few nerve-cells of the medulla oblongata appeared cloudy, with ill-defined outline and indistinct nuclei. Similar but more strongly marked appearances were observed in the cells of Purkinje in the cerebellum. In the interstitial tissue of the brain were observed a large collection of indifferently round elements, whose size was about that of white blood-corpuscles, and which colored strongly. These (probably white corpuscles which had emigrated) were situated for the most part in the perivascular spaces, or in their vicinity, though occasionally grouped together to the number of six to ten at some distance from the vessels in the neuroglia (proliferated nuclei of neuroglia?) Some of these cells were also found in the pericellular spaces, and had even penetrated into the protoplasm of the nerve-cells. The blood-vessels were greatly distended and stuffed with blood corpuscles, their epithelioid lining was swollen in places, and here and there vessels were seen whose walls were composed of a finely granular, strongly refractive, yellowish substance, not soluble in alcohol nor in turpentine. The most noticeable appearance, however, was the presence (in the cortical portion of the hemispheres) of a peculiar, smooth, shining, strongly refracting substance in the perivascular spaces. Occasionally this substance was collected about a vessel in such a way, that on transverse section the latter appeared surrounded by an irregular ring, which pressed on the vessel so strongly as to reduce its calibre. In other instances this substance was collected in little masses, sometimes so regularly arranged around the vessels as to remind one of epithelium. This hyaloid substance was not colored by any staining fluid, and was insoluble in strong alkalies and acids, as well as in alcohol and turpentine. Negative results were given with the reaction for amyloid substances. In other portions of the brain, the perivascular spaces were more or less distended.

The changes in the nerve-ganglia of the heart were as follows. The epithelioid lining of the sheaths covering the nerve-cells was swollen in places; round elements resembling white blood-corpuscles were present in the interstitial tissue of the ganglia. The blood-vessels surrounding the ganglia, excepting the larger venous trunks, appeared for the most part empty. The protoplasm of the nerve-cells themselves seemed more or less clouded, and consequently their nuclei were indistinct or quite invisible; in a few cells, collections of finely granular pigment could be observed.

The most prominent and invariable change was that the nerve-cells did not fill the sheaths entirely, but left spaces, through which only processes of the nerve-cells penetrated to the sheath. A similar appearance was observed by Lubimoff in the cervical ganglia of the sympathetic in oedema, for instance in cardiac disease. In order to decide if oedema actually existed, Wassiliëff measured the nerve-ganglia and cells. The result showed an oedematous condition.

**COHNHEIM AND LITTEN ON DISTURBANCES OF THE HEPATIC CIRCULATION.**—Cohnheim and Litten, in a paper in Virchow's *Archiv*, Band lxvii (abstract in *Centralblatt für die Medicin. Wissenschaften*, No. 42, 1876) propose to answer the ques-

tion, Which of the vessels of the liver is it whose obliteration brings about the atrophy of parts of the organ observed in cirrhosis? By injecting non-poisonous aniline blue into the circulation after ligation of the hepatic arteries and their anastomosing branches (superior mesenteric and left coronaria ventriculi), the whole capillary region of the lobules of the liver was coloured blue; the interlobular arteries alone remained free. The same occurred when the hepatic arteries, in place of being injected, were rendered impervious by injection of chromate of lead. On the other hand, when the portal vein was tied and the hepatic arteries were left free before the injection, the capillary network surrounding the bile-ducts and the branches of the interlobular veins became coloured; and here and there the peripheral organs of the capillary system of the lobules. The filling of the central veins, which occurred at the same time in some points, was due to regurgitation from the vena cava, which occurred when both the hepatic artery and the portal vein were tied. Hence the hepatic artery supplies the vessels of Glisson's capsule, the bile-ducts, and the vasa vasorum of the portal vein; its capillaries pour their blood into the interlobular portal twigs. There is no direct passage of the hepatic artery into the intralobular veins, or only in a very irregular manner.

This view of the circulation explains how it is that thrombosis of the portal vein has no essential influence on the tissue of the liver, as the artery still furnishes to the capillary region of the portal vein a sufficient quantity of blood for the formation of bile. Experiments in which globules of wax were injected from the mesenteric vein into the branches of the portal vein in dogs had not produced, at the end of a fortnight, any remarkable changes in the structure of the liver. The case was different when the hepatic artery was obstructed. The results of earlier experimenters, who found no disturbance of the functions of the organ after ligation of the hepatic artery, were invalidated by the proof of the impossibility of cutting off all the anastomoses of the vessel in dogs and cats. In rabbits, however, this could be effected by applying the ligature behind the organ of the right coronary artery of the stomach. The portions cut off from the arterial supply rapidly become gangrenous.

The conclusion arrived at is that, in cirrhosis of the liver, the contracting connective tissue compresses the branches of the hepatic vein (artery), and that the partial atrophy is produced by the obstruction of this vessel.

**DREYFUS ON HARD CANCER OF THE NIPPLE: CANCEROUS NUCLEI COMPRESSING THE SPINAL CORD, AND IN THE FEMUR; FRACTURE AND INCURVATION OF THAT BONE.**—At the meeting of the Société Anatomique de Paris on Oct. 3, 1876 (*Progrès Médical*, Dec. 30, 1876) M. Dreyfus brought forward the following case. C. Viguier, æt. 48, was admitted into hospital on May 23, 1876. She had enjoyed excellent health until two years since, when she began to experience lancinating pains in the left breast. Little by little the nipple increased in size, yet the tumour was never considerable. It ulcerated and became the seat of hæmorrhage. Repeated cauterisation arrested the progress of the disease. At the same time (Sept. 1875) she felt lancinating pains in the left thigh, and then perceived that the left lower limb was shorter than the right. A little later she said she had "breaking pains"; the deformity of the thigh became more marked, and she was obliged to take absolute rest, all movement

causing exquisite pain. At the same time there were anorexia, constipation, emaciation, and weakness. On her admission she appeared much aged, with a waxy complexion, and very thin. The bowels were obstinately costive. In the situation of the left breast, which was completely destroyed, was a large ulceration, blackish in colour, painful, and with a tendency to hæmorrhage. She had severe pain in the left thigh. The femur was much deformed. The left lower limb was about 6 centimetres ( $1\frac{3}{4}$  inches) shorter than the other. At the level of the great trochanter was an ill-defined swelling, slightly painful on pressure; a centimetre ( $\frac{1}{2}$  inch) lower down crepitation was clearly heard, with very acute pain. A centimetre lower still there was a distinct bend of the femur, which formed an angle of about 70 degrees. The patient declared she had never had a fall or any injury to this part. On the side of the right lower limb there were sensations of pricking and itching. Nothing abnormal could be found in the thorax or viscera, nor in the axillary glands.

At the end of August the paralysis and phenomena of sensation in the right leg had increased; the patient felt severe pain down the vertebral column in the dorsal region: the pain increased on pressure. The patient gradually became worse, and died on October 4th. At the necropsy the left nipple was found completely destroyed; in its place was a large blackish ulceration, with indurated edges, with no neoplastic formations in the neighbourhood. Many cancerous nuclei were found in the lungs, with double hypostatic pneumonia, and cancerous nuclei in the liver and in the kidneys. Genital organs unaffected. No deviation of the vertebral column. A small cancerous mass was found in the interior of the vertebral canal, slightly compressing the cord at the level of the fourth dorsal vertebra, at the back and right side. There was no lesion of the vertebrae. No macroscopic lesion of the cord at the compressed spot was found. The roots of the nerves on the right side were slightly compressed by the cancerous mass. On raising the fleshy masses surrounding the left femur, it was found to be completely fractured a centimetre below the trochanter: the two fragments, irregularly jagged, were about half a centimetre apart. The upper part of the bone was much deformed, the neck very short. The great trochanter was irregularly enlarged. The head of the bone was flattened. A centimetre below the fracture the femur was curved inwards, presenting an angle jutting outwards. Externally, there was nothing abnormal; the bone was somewhat lighter than normal. On making a longitudinal section, there were found two whitish, soft, cancerous nodules, full of blood; the first at the level of the great trochanter, the second immediately below the point of incurvation. The medullary canal was much widened, and filled with a very vascular, soft reddish substance. The osseous trabeculae were much atrophied; the exterior shell of the bone was very thin. Nevertheless, the bone did not seem softer than in the normal state. The bistoury easily penetrated the osseous substance of the great trochanter. There was no change of the pelvic or other bones examined. In remarking on the case, M. Desprès said that, though spontaneous fracture was not uncommon in cancerous patients, the fact of osseous incurvation was very exceptional, if even any other examples existed.

W. DOUGLAS HEMMING.

**HENRY ON THE INTESTINAL LESIONS OF TYPHOID FEVER.**—Dr. Frederick P. Henry has con-



tributed a paper to the *Philadelphia Medical Times* of Aug. 19, 1876 (abstract in *Dublin Med. Journal*), in which he attempts to explain why the intestinal lesions of typhoid fever gradually increase in severity towards the ileo-cæcal valve. From the fact that the superior mesenteric vein has its origin in the lower portion of the ileum, he assumes, first, that there is in that portion of the tract a tendency, gradually increasing from above downwards, towards mechanical hyperæmia. In addition to the peculiarity of vascular distribution, he adds, in the second place, an abnormal amount of peristalsis in this portion of the intestinal canal in typhoid fever. As to the effect of peristaltic contraction upon these lesions he says:—Suppose a follicle two feet above the ileo-cæcal valve to have arrived at the height of the stage of medullary infiltration; at this moment a peristaltic wave traverses the canal; it may not be sufficiently powerful or long-continued to cause sloughing of the mass, but transfer it to the neighbourhood of the valve, and the case will be different. The effect of a peristaltic wave gradually increases in severity as we approach the valve, owing to the gradually increased tendency to mechanical hyperæmia, and sloughing gradually becomes more extensive in the same direction. The second factor in Dr. Henry's theory, viz., increased peristalsis in a diseased condition of the ileum, has a bearing upon treatment. Small and frequently repeated doses of opium, or any other drug that will allay spasm of unstriated muscle, will serve to restore the peristaltic function to a healthy condition, or reduce it to a degree somewhat below the normal. When laxatives are needed in typhoid fever, he would recommend those that excite the least amount of peristalsis. Castor-oil, which is a powerful exciter of peristalsis, evidenced even in health by the griping which it causes, should, he thinks, be condemned as a purgative in typhoid fever. This purgative is the one almost invariably used in that disease, and largely from an odd association of ideas. Its physical properties as a lubricator have caused it to be regarded as soothing to the inflamed mucous membrane. Some drugs act as purgatives, chiefly by increasing peristalsis, whilst others seem to act principally by causing a watery secretion from the mucous membrane. Of the latter class are salines, and especially the sulphate of magnesium. The fact that sulphate of magnesium does not increase peristalsis is vouched for by such experimenters as Vulpian and Legros; while the latter declares this to be true of the whole class of saline purgatives. When, therefore, it is necessary to employ purgatives in typhoid fever, he would recommend salines in decided preference to castor-oil, while enemata, as mere exciters of the function of defecation are, he thinks, unobjectionable.

#### RECENT PAPERS.

- Rare Case of Lesion of the Heart and Aorta. By Dr. Alvarenga. (*Gazeta Médica de Lisboa*, January 13, 28.)  
 The Metamorphoses of Old Age. By Dr. E. Nagel. (*Allgemeine Wiener Medizin Zeitung*, January 9, 16, 23, 30.)  
 Case of Plexiform Neurosis. By M. Jean Garel. (*Lyon Médicale*, January 14.)  
 On Tuberculous Ulcerations of the Mouth in general, in Relation to a Case of Tuberculous Ulceration of the Lips. By M. le Dentu. (*La France Médicale*, January 17.)  
 On Secondary Degenerations of the Spinal Cord in Cortical Lesions of the Brain. By M. A. Pitres. (*Gazette Médicale de Paris*, January 20.)

#### MEDICINE.

BIOT ON "CHEYNE-STOKES RESPIRATION."—M. C. Biot, *interne* of the Hospital at Lyons, (*Gazette Médicale de Lyon*, December 16 and 30), thus describes the respiration of Cheyne-Stokes as observed towards the close of certain diseases. "At a given moment the patient ceases completely to breathe for a variable time—generally for from ten to fifteen seconds at least; then commenced respiratory movements, at first small and superficial, deepening little by little until they become extreme and dyspnoic; then again gradually diminishing in amplitude to complete arrest, when the cycle of phenomena again commences.

M. Biot relates a case in which the Cheyne-Stokes respiration was well marked, and was carefully observed by him for several weeks. The patient, a pale thin man, aged 57, was admitted into the Hôtel-Dieu on September 30th, 1876. On first approaching his bed-side M. Biot was struck with his state of extreme oppression, amounting to orthopnoea; but a few seconds had scarcely elapsed when the orthopnoea almost suddenly disappeared and the patient became drowsy. On arousing him to ask him about his illness, a new period of dyspnoea commenced. The Cheyne-Stokes type of respiration was at once recognised, and the following further particulars were noted. The period of apnoea had an average duration of 17 or 18 seconds, the period of dyspnoea 42 or 43 seconds, the number of respirations during the latter period of dyspnoea was 28, the arrest of breathing always occurring in expiration. The pause, marked by a horizontal line in the pneumographic tracing, corresponded to the upper third of the entire respiratory wave, i.e., at the moment of pause the expiratory recoil of the thorax was incomplete, there being still a notable quantity of air in the chest.

During the period of apnoea the patient was disposed to sleep, his face became slightly cyanotic, and these phenomena disappeared during the respiratory period. The recurring periods of dyspnoea, indeed, caused a sleeplessness that was bitterly complained of. This patient had had no previous diseases, neither rheumatism, cerebral hæmorrhage, nor syphilis. His illness dated back only fifteen days (a characteristic feature of the disease). There was no cephalalgia nor swelling about the neck to suggest compression of the pneumogastrics. Some enlargement of the heart was detected, and *double aortic murmur* with *slight mitral inadequacy* was noted. The pulse had the aortic regurgitant character, and the double bruit of Durosiez was well marked in the femoral arteries. Cardiac pulsations, 86 in the minute, reached the radials without undue delay although the vessels were atheromatous. There was slight pulsation of the jugulars.

Sphygmographic observations were in agreement with the above particulars, but showed an unexpected difference between traces taken during the periods of apnoea and of dyspnoea. During the period of apnoea, lasting 18 seconds, 36 pulsations were noted, whilst during the period of dyspnoea, lasting 49 seconds, there were only 82. The cardiac beats are thus, M. Biot observes, evidently accelerated during the periods of apnoea. On taking (Oct. 6) comparative pneumographic and sphygmographic observations at the same moment, M. Biot found that during apnoea the angles of the pulse-tracings were more marked than during dyspnoea.

This fact, taken with increased rapidity of pulse during apnoea, shewed lessened arterial tension during these periods, an observation opposed to the statements of Filehne. Some days later (Oct. 14) there were some obscurity of ideas, and impairment of sight. The pupils were, during apnoea, contracted, during dyspnoea dilated. The following day, severe and general conjunctivitis set in. On Oct. 17th there were commencing oedema of the face, and slight delirium during the day, more decided at night. On Oct. 18th the duration of apnoea was 18 seconds, cardiac beats 35; duration of dyspnoea 55 seconds, cardiac beats 93. The cardiac pulsations were observed to begin to quicken at that moment of the respiratory period at which the inspirations became superficial, increasing in frequency during the apnoea, and again to become slower with the first appearance of the respiratory movements (not only after the first respirations, as Bernheim had observed). M. Biot took many tracings to fully convince himself on this point. The patient died on Oct. 28th, but no *post mortem* inspection could be obtained. In the treatment of the case 15 grains of chloral given three times in the latter half of the day gave much relief and some quiet refreshing sleep.

After reviewing the opinions of several authors, and more particularly of Traube and Filehne, respecting the explanation of this peculiar disorder of the respiratory functions, M. Biot criticises the views of Filehne; contrasting his own observations with those recorded by the latter author. Without venturing upon any hypothesis of his own at present, he appears rather to favour that of Traube, who so far agrees with Filehne and most others in assuming the necessity in these cases of a diminution in the excitability of the respiratory centres, whether from defective arterial irrigation of the medulla or other cause. In consequence of this impaired sensibility of the respiratory centre, Traube affirms that carbonic acid tends to accumulate in the blood, firstly in the pulmonary circulation, exciting but superficial respiratory movements, which are insufficient to prevent further accumulations in the blood generally. With increasing excess of carbonic acid, however, all the peripheral nerves finally become excited; and, this excitation being transmitted, in addition to that of the pulmonary nerves, to the medulla, the respiratory movements become excessive and *dyspnoic*. The blood now rapidly gathers oxygen, and carbonic acid diminishes so far as to cease to excite the radicles of the pneumogastrics at all (the respiratory centres being also exhausted by prolonged excitation), and the period of *apnoea* commences. Filehne, according to M. Biot, maintains that the first effect of the accumulating carbonic acid in these cases is to excite the vaso-motor system rather than the respiratory centre, causing contractions of the small arteries and anæmia of the nervous centres. Bearing upon the probability of this hypothesis, however, M. Biot's observations upon the single case under consideration are directly opposed to those of Filehne in several points, viz.: the acceleration of pulse and diminished arterial tension during the apnoea stage, the contraction of the pupils observed during the same period, and their subsequent dilations which are not the phenomena of excitement of the vaso motor centres. M. Biot thinks, too, that the advantageous effect of chloral in his case, in lessening the durations of the apnoea from 17 or 18 to 10 or 12 seconds, tends to show that recovery of respiration was not due to excitation of the vaso-motor centres; inasmuch as, if so, it should have been

retarded rather than otherwise by chloral, which diminishes the excitability of the nervous centres.

R. DOUGLAS POWELL, M.D.

SOMMA ON THE TREATMENT OF MENINGITIS GRANULOSA.—In a clinical lecture published in *La Clinica di Napoli* (abstract in *Lo Sperimentale*, January 1876), Professor Somma distinguishes these stages: those of occult predisposition, of manifest predisposition, and of full development of the disease.

In the first stage, the treatment is preventive, and consists in the restoration of the constitution by proper remedies and attention to hygiene. The patient must be kept free from emotions and intellectual labour, and must avoid all causes capable of producing hyperæmia or inflammation of the meninges.

In the second stage, which comprises the premonitory symptoms, the indications are to quiet vomiting by antiseptics and alkaline carbonates, to overcome constipation by aperients, to relieve head-ache by calmatives, and to diminish the slight contractions which occur in some muscles by bromide of potassium and belladonna. Of more importance, however, is the removal of the cause of the symptoms; for this, the remedies recommended in the first stage are to be employed. Dr. Somma regards blisters as highly advantageous; and he recommends the use of iodide of potassium in daily doses varying from 20 to 40 *centigrammes* (30 grains to one drachm) in distilled water.

In the third stage there is little to be done. Some leeches may be applied over the mastoid process, bladders of ice to the heart, and blisters. He advises the use of tartar emetic ointment; and as internal remedies, iodide of potassium, with calomel and other purgatives. The convulsive and spasmodic forms of the disease are treated by bromide of potassium combined with the iodide. When the morbid phenomena come to a stand and symptoms of collapse appear, he gives valerianate of quinine in half-gramme doses ( $7\frac{1}{2}$  grains). In the stage of collapse, he uses stimulants freely.

FIORI ON A CASE OF CEREBRAL SYPHILIS, WITH REGARD TO THE DIAGNOSIS OF LESIONS OF THE CORPORA QUADRIGEMINA.—In the *Annali Universali di Medicina* for September 1876, Dr. Fiori makes a valuable contribution to the literature of visceral syphilis. The patient was a man of robust constitution, a soldier, who had had one attack of syphilis, followed by the constitutional symptoms of the disease. One day, eleven years after infection, he suddenly fell down unconscious, and had clonic spasms of the whole body. This condition was followed by paralysis of the right arm and leg, which, however, disappeared in eight days. The attacks recurred from time to time, and, when he was admitted into the hospital at Turin, presented the following characters. They commenced with tonic contraction of the right sterno-mastoid muscle, causing the head to be turned to the left; then spastic contractions took place in the eye-lids, and in the muscles of the left cheek, as well as in those of the neck and limbs, generally on the left side, but sometimes on the right. During the attack, the head remained forcibly turned to the left; the eye-balls were hidden, the eye-lids contracted, the pupils dilated; the left angle of the mouth was drawn outwards; the pulse and respiration and general sensibility were normal; speech was impossible, but consciousness



was perfect. Each attack lasted from two to five minutes. The earlier attacks were followed by paralysis of motion in the left arm and leg. After the attacks, the patient spoke and moved normally. During the paroxysms he was several times seen while in the hospital to rotate on the longitudinal axis of the body towards the left.

These symptoms denoted a limited disease of the brain; but it was difficult to determine the seat with accuracy. Professor Rovida attached much importance to the movements of rotation. In animals, the so-called *mouvements de manège* are produced by lesion of the peduncles; but, with the complication of other symptoms, it was not possible to limit the disease to these structures. The ocular phenomena pointed to disease of the corpora quadrigemina; and the consideration of the two principal groups of symptoms—contraction and paralysis of the muscles of the face and limbs, and the deviation of the eyes and head,—led to the belief that the disease lay partly in the corpora quadrigemina and partly in the cerebral peduncle. As to the nature of the lesion, cerebral hæmorrhage, capillary embolism, thrombosis of arteries, disseminated sclerosis, cerebral abscess, partial ischæmia and softening, and tumour, all had to be excluded; and the diagnosis arrived at was, that the case was one of cerebral syphilis. This was confirmed by the result—almost complete recovery under the use of hypodermic injection of calomel.

A. HENRY, M.D.

**BERGER ON NERVOUS PHENOMENA IN CASES OF INTESTINAL STRANGULATION.**—M. Berger (*Bulletin Général de Thér.*, October 30, and *Dublin Medical Journal*) has collected sixteen cases, which he divides into three groups:—Cramps, contractions, and convulsions. A fourth species may also be admitted—viz., syncope, of which one instance has been noted. Cramps are most frequently observed. They are especially common in the calf, sometimes in the arms, and all down the leg; in very severe cases they engage the wrists and fingers. The pains are so violent that they may mask those due to the strangulation. The variety of the strangulation, crural or inguinal hernia, internal strangulation, &c., has no influence upon these nervous phenomena. They may be complicated with severe pulmonary lesions, of which M. Berger has collected two examples. These nervous accidents resemble those described by Trousseau in cholera and dysentery, and they are always preceded or accompanied by a serious general condition of the system, to which Malgaigne has given the name of hernal cholera. M. Berger, a report of whose essay on the subject was presented to the Société de Chirurgie by M. T. Anger, concludes that the existence of these nervous symptoms indicates a very tight constriction which requires immediate liberation.

**BEURMANN ON PARALYSIS OF THE FOUR LIMBS FOLLOWING A CUT WITH A KNIFE.**—At the meeting of the Société de Biologie on Dec. 23rd, 1876 (*Progrès Medical*, Dec. 30, 1876), M. Beurmann presented a patient whom he had seen in the service of M. Proust. The patient was, on the 18th November, 1854, struck with a knife on the left upper part of the neck, immediately below the occipital bone, and fell paralysed in all four limbs. He did not lose consciousness for a single instant; his intelligence was intact, but he could not speak; all the muscles of the limbs were in a complete state of relaxation. The following day a contraction was produced which

invaded successively the legs, the arms, the neck, the muscles of the face, and the eyes; the respiratory muscles remained unaffected. The following days the muscular rigidity disappeared little by little. At the end of two months, movements of the arm and leg were possible. After a year, the patient was able to use his right leg. Movements of the right arm returned partially at the end of two years. There exists at present incomplete paralysis of the right arm; the hand is oedematous. We must suppose, from these phenomena and the position of the cicatrix, which is still visible, that there has been a lesion of the upper part of the medulla, at the level of the left pyramid, and above its crossing, as the persistent paralysis of the right arm indicates.

**MAGNAN ON A CASE OF SYMPTOMATIC EPILEPSY.**—At the meeting of the Société de Biologie, Dec. 23rd, 1876 (*Progrès Medical*, Dec. 30th, 1876), M. Magnan related a case of symptomatic epilepsy perfectly characterised. A man, aged 45, received, in February, 1862, a kick from a horse on the left heel; in the following April he was seized with cramps in the leg, and soon an attack of epilepsy supervened. Little by little the attacks increased in frequency and intensity. Many of them were preceded by pain and a kind of aura proceeding from the cicatrix. The patient had no kind of morbid or hereditary predisposition. Four or five years since he was put under the action of bromide of potassium in large doses; the attacks have diminished, but have not ceased. M. Magnan asks whether, if interference came to be necessary, it would be advisable to remove the cicatrix and divide the nerves.

W. DOUGLAS HEMMING.

**FLINT ON PHTHISIS.**—In a paper lately read before the New York Academy of Medicine, Dr. Austin Flint said that his experience in the study of phthisis extended back for a period of thirty-five years, and in that time he had collected notes of a vast array of cases.

In regard to the question, whether tuberculosis might develop in phthisis as a secondary result, he was of opinion that, as a rule, the question should be answered in the negative. Acute croupous pneumonia did not seem to have a direct influence as a cause in producing phthisis, for only a small number of cases were subsequent to that disease. The same was true of pleurisy. His observations tended to prove that bronchial hæmorrhage did not cause phthisis, but he was of opinion that hæmorrhage from the mucous membrane of the bronchi was indicative of a tendency to phthisis. He found, also, that hæmorrhage occurring in phthisis did not point to a speedy and fatal issue.

Recovery was in proportion to the amount of invaded lung, and, moreover, in a certain and considerable number of cases, there was that tendency. When recovery did take place, observers were liable to distrust the diagnosis.

In respect to treatment, he said that, of forty-four cases in which recovery did take place, no treatment was pursued in eight. In regard to the effect of good hygienic surroundings, Dr. Flint thought that they seemed to prolong the time in fatal cases. He rather favored the view that climatic effects were in many cases of doubtful benefit, and that as valuable results might frequently be obtained by having the surroundings everything that could be desired, and keeping the patient at home.

**HOLDEN ON A NEW MEANS OF PHYSICAL DIAGNOSIS.**—In the *New York Medical Record* for January 27, Dr. E. Holden describes a method which, he says, he has found of much use in the diagnosis of chest-disease. His description is as follows. A soft India-rubber tube, five-eighths of an inch in internal diameter, and two feet long, with simple end-pieces of thin metal, and of a diameter of three-quarters of an inch, will, when blown into with a little force, produce a rushing noise at its extremity. The same sound is produced by forced inspiration. This is the instrument required. If the patient be made to respire through this, the ear of the physician being applied to the chest, and particularly at the suprascapular space, this rushing sound is transmitted with clear resonant volume. Disease, however slight, exaggerates the sound, alters the pitch, or changes it in proportion to the solidity of the conducting tissues. Obliging the patient to hold the extremity of the tube away from the listener prevents distracting his attention from the transmitted to the real sound, as does of course also the closing of the free ear with the hand. A singularly magnified character is given to the respiratory murmurs, and the stethoscope is unnecessary. In thin persons, so great is the exaggeration of the natural sounds that, as with the stethoscope, comparison of the two sides may at times be requisite to prevent misinterpretation: but in local consolidations and small cavities it has proven invaluable.

As a brief summary of observation with this device, Dr. Holden remarks that it intensifies the sounds of vesicular dilatation, whether in a normal or in a morbid state. It intensifies the tubular sounds, which to the unassisted ear are sometimes partially drowned by the neighbouring healthy murmurs, and it exaggerates to painful hoarseness the evidences of air in cavities. Farther experience will undoubtedly define more clearly the amount of assistance it will render in phthisis. Several cases illustrating its use are given in the original.

#### RECENT PAPERS.

Peritoneal Exudation, lying above the Liver, and perforating the Right Lung, with symptoms of right-sided Pyopneumothorax. By Dr. Pfuhl. (*Berliner Klinische Wochenschrift*, January 29.)  
 Closure of the Right Artery Vein by a Substernal Strumous Deposit. By Dr. Kretsch. (*Wiener Medizin. Wochenschrift*, Jan. 1, 1877.)  
 On the Athetosis of the Hand. By Dr. O. Berger. (*Berliner Klinische Wochenschrift*, January 15 and 22.)  
 On the Treatment of Simple Ulcer of the Stomach. By P. T. Gallard. (*Bulletin Général de Thérapeutique*, January 16, 1877.)  
 Sudden Death from Syncope during Typhoid Fever. By M. Lebermann. (*Gazette des Hôpitaux*, January 16.)  
 A case of Chronic Alcoholism with Suicidal Impulses, &c. By M. Magnan. (*Gazette Médicale de Paris*, January 20.)  
 Salicylate of Soda, and Brandt's Method in Typhoid Fever. (*Le Mouvement Médical*, January 20.)  
 On Insomnia. By M. Barbier. (*Lyon Médicale*, January 21.)  
 The Plague in Bagdad. By Dr. K. Adler. (*Allgemeine Wiener Medizin. Zeitung*, January 2, 9, 16.)  
 On Leukæmia. By Dr. Chvostek. (*Allgemeine Wiener Medizin. Zeitung*, January 2, 9, 23.)  
 A Rare Case of Albuminuria. By Dr. Mayer. (*Erztliches Intelligenz-Blatt*, January 23.)  
 On Percussion of the Heart. By Dr. Guttman. (*Berliner Klinische Wochenschrift*, February 5.)  
 Contributions to the Study of Localisations in the Cortex of the Brain: Observations relating to Paralysis and Convulsions of the Arterial Origin. By MM. J. M. Charcot and A. Pitres. (*Revue Mensuelle de Médecine et de Chirurgie*, January 1877.)  
 On the Arrest of Carotid Pulsation on the Cardiac Systole in Aortic insufficiency. By M. Tripiet. (*Ibid.*)  
 Study on Anthracoid Diseases, observed amongst the Milan tanners. By Dr. Bompain. (*Montpellier Médical*, January 1877.)  
 On Partial Epilepsy of Syphilitic origin. By M. Charcot. (*Le Progrès Médical*, January 27.)  
 Elements of Diagnosis in Cancerous and Tuberculous Cases. By M. Potain. (*Le Mouvement Médical*, January 27.)  
 A Case of Addison's Disease. By Dr. W. Pepper. (*American Journal of Medical Science*, January.)

Partial Aphasia, without appreciable Lesion of the Island of Reil. By Dr. W. Pepper. (*Ibid.*)  
 Aphasia, from Paralysis of the Arytænoideus Proprius Muscle, with Concomitant Heart-Disease. By Dr. B. Robinson. (*Ibid.*)  
 Case of Multiple Emboli, caused by Organic Disease of the Heart: Nutritive Changes. By Dr. W. H. Webb. (*Ibid.*)  
 Pig-Measles and Tænia Solium. By P. Megnin. (*La France Médicale*, January 24.)  
 Typhoid Fever, accompanied by Ulcer of the Stomach, Gastrorrhægia, and General Peritonitis. By Dr. Millard. (*L'Union Médicale*, January 30.)  
 Mercurial Poisoning: Diffused Paralysis; Hemianæsthesia. By Dr. Frémy. (*La France Médicale*, January 31.)  
 Pulmonary Tuberculosis, Tracheobronchic Adenopathy, Diaphragmatic Pleurisy. By M. Fernet. (*La France Médicale*, Feb. 3.)  
 Treatment of Variola by the Cold Bath. By M. Clement. (*Lyon Médical*, February 4.)  
 Contribution to the History of Volvulus. By M. F. Farmer. (*Ibid.*)

#### SURGERY.

**TRENLEDENBURG ON SUPRAPUBIC LITHOTOMY.**  
 —Professor F. Trenledenburg, of Rostock, in a contribution to the *Berliner Klinische Wochenschrift* (No. 2, 1877), on suprapubic lithotomy, states that the chief objection against this operation is the risk of urinary infiltration, and of phlegmonous inflammation in the loose paravesical connective tissue. This risk, however, has, he thinks, been much exaggerated. It has been proved by the experiments of Simon and Menzel that urine does not irritate the surface of a granulating wound, and that healthy and fresh urine injected under the skin becomes absorbed without causing mischief. On the other hand, urine, especially when it is mixed with blood and *débris* of tissues, if allowed to remain long in contact with healthy structures, and to stagnate and undergo decomposition, will certainly set up inflammation. When, after suprapubic lithotomy, suppuration takes place in the paravesical connective tissue, this is generally a consequence of neglecting to maintain a free and constant flow of urine through the cannula. The author suggests that, after the operation, the patient should be made to lie on the belly for some days, and that a drainage-tube should be retained in the bladder, in order to allow a constant discharge of the urine. This drainage-tube, in order that it may not slip out of the bladder, should be traversed near its upper extremity by a cross-piece of gum-elastic material, which would form on each side of the tube a wing, as in Holt's retention catheter. There is usually very little difficulty, the author asserts, in keeping the patient—at least if it be a child—in the abdominal position. It is necessary that the bed should be soft and elastic, and that the wound be left quite free. The best arrangement, it is stated, is one of two large square cushions, containing air or water, placed so that the body and head of the patient rest on one, and the lower limbs on the other, an interspace being left, in which a vessel may be placed for the reception of the urine, which runs drop by drop through the drainage-tube.

A case is reported, in which a child aged 2 years was cut above the pubes for stone, and afterwards treated in the above-described manner with complete success. In this case the stone, which could be readily felt on rectal examination, was, by the forefinger introduced through the anus, lifted up against the anterior wall of the abdomen, and then removed through an incision made directly over and upon it.

#### SCHEDÉ ON THE TREATMENT OF GENU VALGUM.

—Dr. Max Schede reports in the *Berliner Klinische Wochenschrift* (No. 52, 1876) four cases of distortion of the leg, treated under antiseptic conditions by



excision of a portion of the tibia, and simple division of the fibula by means of a chisel. The patient in the first case was a male, aged 23 years, who had had double genu valgum for nearly five years, and had been treated unsuccessfully by ordinary orthopædic appliances. When the case came under the author's care the legs of the patient diverged, so as to form an angle of 80 degrees in the recumbent position, and an angle of 90 degrees when the man was erect. Each lower limb, including thigh and leg, was rotated outwards to a considerable extent. It was at once concluded that in this case no treatment short of osteotomy would prove effectual. Before applying such treatment to his case, the author had to decide which of two methods to select. There was that of the so-called subcutaneous section, much practised by Billroth, and warmly advocated by Gussenbauer, and there was that of the older operation known as Rhea Barton's, which consists in excision of a wedge-shaped piece of bone. The author, whilst acknowledging the greater severity of the latter operation, due to much wounding of the soft parts, and to exposure to the air of a considerable surface of recently divided bone and marrow, decided on this proceeding in preference to the former. It was thought that its ultimate results would be better, and that any immediate risks from the operation might be prevented by the use of antiseptic appliances. In all previous cases in which osteotomy had been practised for the relief of genu valgum, the tibia only, the author states, had been divided, the fibula having been left intact. In consequence of the resistance offered by this bone in attempts to strengthen the limb after osteotomy on the tibia, it was decided to divide both bones. The upper third of each fibula was exposed by a vertical incision between two and three centimetres in length on the outer surface of the leg, the periosteum having been incised in the same direction, and turned forwards and backwards from the outer surface of the bone. The shaft was then cut through by means of a chisel. Over each tibia, an incision was made at the inner surface of the leg at the upper third. Incisions disposed so as to form the letter H were then made into the periosteum; the flaps thus formed were turned upwards and downwards, and a wedge of bone—the base of which had been thus laid bare—was finally removed from the shaft of the tibia by means of a small and narrow saw. The base of each wedge-shaped fragment of bone was about two centimetres wide. During this operation, which was performed on February 28th, Lister's antiseptic method was closely observed, and each limb remained bloodless through the previous application of Esmarch's apparatus. Before closing each wound, great care was taken to remove any fragments of detached bone. The author insists much upon this detail, and points out that the neglect of such precaution will probably be followed by prolonged and profuse suppuration, and by some necrosis of the cut surfaces of the bone. After section of the bones in this case the author found much difficulty in straightening the limbs, in consequence of the resistance of the soft parts. In order to prevent any return of the distortion during the after-treatment, each limb was kept straight through lateral extension with weights, and, after the antiseptic dressings to the wounds had been discontinued, through the application of gypsum bandages. The patient, after a mild attack of facial erysipelas, which lasted from the 2nd to the 6th of March, did very well. On March 22nd, after three dressings to each limb, all the wounds in the

left leg were nearly closed. On April 5th, when the cicatrization was complete, all dressings were discontinued, and a gypsum bandage was applied to this limb. In the right leg, however, there was for some time free suppuration from the inner wound, and also superficial necrosis at the cut surfaces of the tibia. This unfortunate result the author attributed to the presence of a small detached fragment of bone, which had been overlooked at the time of the operation. The suppuration was kept up until the middle of July, but subsequently soon ceased after the removal at this time of a small sequestrum. At the end of September there was firm consolidation of the bones in both the left and the right legs; each limb was perfectly straight, with functions then good, and promising to improve much with renewal of action and power in the muscular apparatus. Considerable distortion of the feet remained after the operation; the phalanges and metatarsal bones being turned inwards to a considerable extent. This deviation had been caused by the attempts made by the patient to place the sole of each foot on the ground whilst he was the subject of genu valgum, and was much exaggerated in consequence of the extreme outward rotation of each limb.

In one of the four cases reported by Dr. Schede, the inbowing at the knee was unilateral, and the result of chronic periostitis of the whole of the right tibia. In the subject of this case, a girl aged 15 years, the slow inflammatory process had caused not only considerable subperiosteal deposit of new bone, but also very considerable acceleration of the growth of the whole shaft, so that the right measured more than the left tibia by between eight and nine centimetres. As the fibula had not increased in the same manner, the affected tibia became curved with the convexity inwards. The lower articular surface of the bone being no longer directed directly downwards but obliquely outwards, the foot was much distorted. The internal lateral ligaments of the ankle-joint had been much attenuated, so that, when the lower extremity was applied to the ground the foot twisted outwards, and the weight above was supported mainly by the inner malleolus, much pain and trouble being thus caused to the patient, who could not get about except on crutches. In this, as in the preceding case, a wedge-shaped portion of the affected tibia was removed, and a simple linear section made of the fibula; but here the seat of the operation was near the lower end of the limb, and at a distance of three fingers' breadth from the tip of each malleolus. The wounds, made and dressed under antiseptic conditions, closed rapidly and without suppuration. On the twenty-ninth day after the operation there was firm consolidation of the leg bones, and the ultimate results of the treatment are reported as having been completely successful.

The last case described by the author was one of very complex rhachitic curvature of both legs in a girl aged twelve years. Each tibia, presenting the most severe form of characteristic rhachitic distortion, was flattened in its transverse diameter, and had the form of a sword scabbard. Each bone was also twisted, so that its crest looked inwards, and in addition there was bending outwards of the lower half of the shaft, the convexity of the curve thus formed being constituted by the tibial crest. In order to remove the deformity, and to improve the much impaired function of the limbs, a wedge of bone, with its base corresponding to the inner and anterior portions of the shaft, was removed from each tibia, and then an attempt was made to rotate

outwards the lower fragment of the bone. It was found that this rotation of the lower fragment could not be brought about in either limb, until after division of the fibula by subcutaneous fracture. These bones were found to be very elastic, and did not give way until they had been bent almost at a right angle. The section of each tibia was made at about the middle of the leg, and the fibulae were broken at corresponding parts.

After this operation, which was performed fourteen days before the publication of Dr. Schede's paper, the wounds closed speedily, and the condition of both limbs in this early stage of the after-treatment was such as to promise a very satisfactory result.

W. JOHNSON SMITH.

**PARONA ON THE OPENING OF DEEP-SEATED ABSCESSSES OF THE FOREARM.**—Dr. Parona contributes an article on this subject to the *Annali Universali di Medicina* for November. He says that the difficulty of treating deep-seated abscesses in the forearm, and the frequent death of the patients, are well known facts. One of the most grave inconveniences is that the methods of Nélaton and Dolbeau do not provide for the complete escape of pus, and are attended with risk of wounding the artery. From a careful study of the anatomy of the parts, Dr. Parona has arrived at the conclusion that an opening may be made easily, quickly, and safely on the ulnar side of the arm, through the pronator quadratus and the deep flexor muscles. For this purpose an incision is made parallel and slightly anterior to the ulna, commencing four-fifths of an inch above the articulating end of the bone, and passing nearly two inches upwards. The skin and subcutaneous tissue having been divided, an incision in the same direction is made in the aponeurosis, care being taken to keep the knife towards the bone rather than towards the inner margin of the flexor ulnaris. In this way the deeper part of the forearm is reached, the skin and aponeurosis only being divided, and the vessels and nerves left uninjured; and the escape of pus is rendered easy. Dr. Parona has employed this method in two cases with a rapidly successful result.

**CASABIANCA ON THICKENING OF THE SEPTUM OF THE NASAL FOSSÆ SIMULATING MALIGNANT TUMOUR.**—In a thesis on the affections of the nasal septum (*Journal de Médecine et de Chirurgie Pratiques*, Nov. 1876), M. Casabianca describes two cases under the care of M. Verneuil, in which that surgeon was deceived as to the nature of an affection of the nasal septum, so much as to almost induce him to perform an operation. The first case was that of a woman twenty-five years of age, who was admitted into La Pitié for an affection of the nose which had commenced about a year before. During the last few months, it had made rapid progress and become very troublesome. The nose was almost double its proper volume, red, tense, and shining, and gave to the finger a false sensation of fluctuation. On putting the patient's head back, M. Verneuil saw at the entrance of the nasal fossæ a reddish, fungoid, papilliform mass completely obstructing both nostrils, and strongly resembling a papillary epithelioma. There was no engorgement of the lymphatic glands. Hesitation appearing impossible, M. Verneuil would at once have performed an operation, had he not been deterred by the fact that the patient was eight months gone in pregnancy. Three weeks after delivery, considerable improvement was seen; the swelling of the

nose and the projection of the nostrils were much diminished, the tumour of the septum greatly reduced in volume, etc. The first diagnosis was then abandoned, and it became probable that the case was of a scrofulous or syphilitic nature. Antisyphilitic treatment gave no good result, but antiscrofulous treatment was more successful, and the patient got much better.

The second case was that of a lady aged fifty years, who suffered from an apparently serious affection of the nasal septum, which a distinguished surgeon had considered to be epithelioma. The nose was red, swollen, and tender on pressure; at the entrance of the nasal fossæ was a reddish tumour, firm to the touch, projecting from each side of the septum and almost completely obstructing both nostrils, rendering respiration almost impossible. This patient was put under antisyphilitic treatment, and completely cured. These two cases show that the septum is sometimes the seat of special hypertrophies, susceptible alternately of amelioration and of aggravation, which may at certain times present all the appearances of malignant tumour, especially of epithelioma. This thickening of the septum is caused by syphilis or scrofula, and is situated usually at the level of the cartilaginous portion. Usually bilateral and symmetrical, it is sometimes more prominent in one nostril, and may even be developed on one side only of the septum. Its point of origin appears to be in the perichondrium. In the thickness of this fibrous layer there is found a plastic infiltration similar to that which exists in syphilitic periostitis; so that, in fact, the thickening of the septum is due to a chronic perichondritis. But it is difficult for the mucous membrane not to participate more or less in the alteration of nutrition. Joined by its deep surface to the perichondrium, it usually ends by becoming inflamed in its turn, with thickening, swelling, and finally ulceration.

W. DOUGLAS HEMMING.

#### RECENT PAPERS.

- Contributions to the Treatment of Malignant Lymphoma. By Dr. von Buschmann. (*Wiener Medizin. Wochenschrift*, November 1, 2, 3, and 4, 1877.)
- Fibroid Tumour of the Sphenomaxillary Fossa: Osteoplastic Resection of the Upper Jaw: Recovery. By Dr. Burow. (*Berliner Klinische Wochenschrift*, January 9.)
- Fusiform Aneurism of the left Common Carotid Artery: Peripheral Ligature: Death. By Dr. Dittel. (*Wiener Medizin. Wochenschrift*, January 20, 27; February 3.)
- On the Local Treatment of Chronic Vesical Catarrh. By Dr. M. Schüller. (*Deutsche Medizin. Wochenschrift*, January 20 and 27.)
- Laceration of the Symphysis Pubis and of the Urethra: Necrosis of the Pubic Bones: Recovery. By Dr. Wehl. (*Ärztliches Intelligenz-Blatt*, January 23.)
- On Corradi's Treatment of Stricture of the Urethra. By Dr. Pellizzari. (*Lo Sperimentale*, January.)
- Depressed Fracture of the Skull, without Wound. Trephining. Elevation of the Fragment: Lister's dressing. Cure. By M. E. Boeckel. (*Gazette Médicale de Strasbourg*, February 1, 1877.)
- Rupture of the Healthy Esophagus. By Dr. R. H. Fitz. (*American Journal of Medical Science*, January.)
- The Treatment of Certain Injuries of the Head, accompanied by Lesions of the Brain and its Membranes. By Dr. W. B. Rodman. (*Ibid.*)
- A Case of Sarcomatous Tumour, mistaken for Popliteal Aneurism, By Dr. E. Mason. (*Ibid.*)
- Pulsating Tumour of Orbit, resembling true Aneurism: Ligation of Common Carotid: Removal of Tumour: Recovery. By Dr. G. E. Farthingham. (*Ibid.*)
- Treatment of Fracture of the Femur. By Dr. F. Brothier. (*Ibid.*)
- Extraordinary Case of Urinary Calculi. By Dr. J. R. MacGregor. (*Ibid.*)
- Death from Concealed Hæmorrhage of the Femoral Artery. By Dr. W. G. Cotton. (*Philadelphia Medical Times*, January 6.)
- Diagnosis of Tumours of the Testicle. By M. Trélat. (*Le Progrès Médical*, January 20.)
- On Wounds, considered as causes of the arousing of Diatheses, and as causes of their local determinations: On Tuberculation of Traumatic origin. By M. A. Verneuil. (*Revue Mensuelle de Médecine et de Chirurgie*, January 1, 1877.)



Manifestations of Rheumatism or Gout in Calculous patients after Operation. By Dr. Courty. (*Montpellier Médical*, January 1877.)  
Lithotomy. By M. Guyon. (*Le Mouvement Médical*, January 27.)  
Operation for Strangulated Umbilical Hernia. By M. Nicaise. (*Gazette Médicale de Paris*, January 27.)

## MATERIA MEDICA AND THERAPEUTICS.

LOMBARD ON THE INFLUENCE OF DIGITALIS ON THE TEMPERATURE, PULSE, ARTERIAL TENSION, AND RESPIRATION.—Dr. Alfred Lombard has made this the subject of an inaugural thesis, recently abstracted in *Le Progrès Médical*.

As a pupil of Feltz and Ritter, and under their direction, he performed numerous experiments.

The infusion of digitalis was made use of, introduced directly into the venous system. The exact relationship between the weight of the animal and the substance injected was made out. The temperature was taken in the rectum; Marey's apparatus was used to register the pulse; and a special contrivance of M. Feltz was employed to measure the arterial tension.

From the researches of the author it appears that, first, the most constant effect of digitalis, whether administered in toxic or medicinal doses, is to produce a change of arterial tension. This invariably diminishes directly the digitalis begins to produce its effects. Secondly, the constant and progressive weakening of the arterial tension shows that digitalis acts primarily upon the heart, and has a direct effect upon the cardiac ganglia. Thirdly, with the diminution of tension the temperature falls step by step. Fourthly, as soon as the system has been brought under the influence of digitalis, the pulse falls suddenly and very considerably. Fifthly, the respiration becomes irregular.

[Amongst the various conclusions come to by the author, there is only one which can be considered really new: that, namely, with regard to the seat of action of digitalis being the principal agent in its effects, a direct action upon the motor nervous centres of the heart. The conclusion seems to be well drawn; in any case Dr. Lombard's labours have been conscientious and well-conducted, and the results arrived at are supported by a very great number of experiments.—*Rep.*]

LUBERT ON THE TREATMENT OF TABES MESENTERICA.—Dr. Lubert of Héricourt (Haute-Saône), reports (*Gazette Médicale de Strasbourg*, 1 Dec. 1876) a simple, easy, and efficacious mode of treatment of tabes mesenterica. The author is indebted to his father for it, and the latter got it from a medical man in the Austrian army in 1814; it has been tested for upwards of sixty years with undeniable success.

The formula is as follows: Tincture of Rhubarb, 30 parts; Liquor Potassæ Acetatis, 8 parts; Antimonial Wine, 4 parts.

The mixture is given to the patient in drops with a teaspoonful of sugared water three times a day, morning, noon, and night, the number of drops being regulated by the age of the infant; 10 drops is a minimum, 20 drops a maximum dose; and no accessory treatment.

There is no case in which it is contra-indicated, except when there is well-marked fever and considerable diarrhoea. Commencing rickets and

enlargement of the joints need not prevent its employment.

The treatment should be continued, but in gradually decreasing doses, two or three weeks after the recovery of the patient.

BESNIER ON A SIMPLE MEANS OF LESSENING THE PAIN ATTENDING BLISTERS.—The practice of blistering in the treatment of acute articular rheumatism would meet with much more favour in this country if pain and, in certain cases, strangury and slight hæmaturia, were not inherent to this mode of treatment. A hypodermic injection of morphia relieves the pain, but has no effect upon the urinary troubles. To alleviate the one and prevent the other, M. Ernest Besnier proposes the following plan. Take care that the blister is applied in the early morning; those convenient ones which are covered with a sheet of oiled tissue-paper will cause very little suffering, and never give rise to those vesicatory or renal troubles which are now and then so severe and painful, provided the blister be removed after a few hours, 5 to 10 at the outside, as soon as the epidermis begins to rise slightly and partly, which we may recognise by the skin becoming pearly and irritated. The plaster must then be removed (a very few hours' application is sufficient for a child or a thin-skinned person), and its place must be supplied by a piece of blotting-paper very thickly coated with cerate or cold cream. The vesication continues almost painlessly, and the blisters rise nearly as well as if the cantharides had been kept applied. The practitioner who does not disdain to attend to such minute details will gain the thanks of his patient, and more especially of those who have been previously treated by such inhuman proceedings as are common where blistering is employed.

SIROP MAGISTRAL.—This syrup, which is mentioned in D'Espine and Picot's *Manuel des Maladies de l'Enfance*, is much used at Geneva as a tonic for emaciated anæmic children. The formula for it is as follows: Cream of Tartar, 500 parts; Iron Filings, 96 do.; Cinnamon, 16 do.; Sugar, 2000 do.; Orange Peel, Rhubarb, each 32 do.; White Wine, a sufficiency. A spoonful night and morning.

A. SHEWEN, M.D.

MORITZ ON CARBOLIC ACID SPRAY IN CATARRHAL DISEASES OF THE RESPIRATORY ORGANS.—Dr. Moritz, in a communication to the Medical Society at St. Petersburg (*St. Petersburg. Medicin. Wochenschrift*, Nov. 11, 1876), states that during the spring of last year he used carbolie acid spray with benefit in catarrhal diseases of the respiratory organs. Having had much to do with carbolie acid, and especially the spray, he noticed that the bronchial catarrh with which he was frequently troubled did not occur, or that, if it began, it was soon arrested. A colleague of his, Dr. Assendelfft, made the same observation. Dr. Moritz used the spray of a two per cent. solution of carbolie acid. He first tried it on two children in whom the commencement of whooping cough was suspected. After the remedy had been used two days, the slight catarrh which was present came to a stand-still, and in a few days disappeared. In several children with measles, the cough was diminished, and the nights were more quiet after the use of the carbolie acid spray. In two surgical patients also, whose lungs were in a suspicious state, the cough entirely disappeared during the frequent use of the spray. On the other hand, it was ill borne by two phthisical patients, one of whom had

extensive cavities in the lungs. He explains the action of carbolic acid by supposing that many cases of catarrh are, during a certain stage, of infectious, perhaps parasitic nature. In the discussion on the paper, Dr. Von Mayer said that, if bronchial catarrh were infectious, this must be explained rather on chemical grounds. Dr. Wulff thought that many cases of catarrh might to some extent be parasitic. Dr. Lehweß had found solution of carbolic acid very useful in cough, in the form both of inhalation and of injection. Dr. Masing had found excellent results from the carbolised spray in a very obstinate case of whooping cough of three months' duration. Dr. Schmitz had remarked the cessation of the attacks of bronchial catarrh to which he had been liable, since he had had much to do with the carbolic acid spray.

**SCHNITZLER ON THE SUBCUTANEOUS INJECTION OF CARBOLIC ACID IN PHTHISIS.**—Dr. Schnitzler (*Wiener Med. Presse*, Nos. 32 and 35, 1876) was led by observing the favourable results of subcutaneous injection of carbolic acid in an obstinate case of diphtheria, to try it in other diseases attended with febrile symptoms, especially phthisis. During June and July of last year he injected carbolic acid subcutaneously in more than 100 cases of consumption. The injections were made once, and in a few cases twice daily; one or two charges of a Pravaz's syringe with a one or two per cent. aqueous solution of carbolic acid being used. The injections were generally made in the back and chest, more rarely on other parts of the body. He has also used a Leiter's syringe, which contains 1 gramme: thus injecting one or two centigrammes of carbolic acid at each dose.

In most of the cases, the result was a reduction of the fever; the temperature fell, the pulse became slower and stronger, and the breathing generally more tranquil; the feeling of weariness and weight in the limbs was often remarkably relieved, and, after repeated injections, the night-sweats were diminished. In some cases, the injections appeared to have a palliative effect on the cough and expectoration; but this was not constant.

In many patients the injections were continued almost without interruption from two to four weeks. They generally agreed in stating that they felt much better after the injection, and especially that they had less pain: some, however, were not again seen after one or two injections.

Dr. Schnitzler is not as yet able to explain the action of the medicine; but he considers that the incontestable effect on the fever renders it possible that the carbolic acid may exercise a beneficial result on the whole course of the disease. He considers that the carbolic acid injections are at least as effective against hectic as quinine, if not more so.

Dr. Schnitzler has never met with any untoward results from the subcutaneous injection of carbolic acid, which he has employed in several hundreds of cases. It is not much more painful than the injection of morphia; but the burning sensation at the point of injection sometimes lasts longer, and in some cases there were itching and pricking at the spot for some hours. Now and then there was slight inflammation, which soon disappeared; in one case only there was more swelling, which was reduced in a few hours by cold applications.

**BETZ ON THE USE OF ICE IN CROUP.**—Dr. F. Betz (*Memorabilien*, 10 Sept. 1876) recommends in

cases of croup the application to the front of the neck of a bottle or bladder filled with finely powdered ice, and fastened by a light bandage. When the temperature is high, salt is added. The bottle must not be allowed to remain until the ice is completely melted, but must be renewed before this occurs. By this treatment, the temperature of the anterior part of the larynx and trachea is lowered, so that the process of exudation is arrested. At the same time, heat is abstracted from the air passing to the lungs through the larynx and trachea; and this acts favourably on the lungs. The ice-treatment of croup is to be regarded as the most rational preventive and abortive plan, if its application be sufficiently early, energetic, and continued. If it be too late to subdue the formation of the false membrane, ice is of very great value during operation and in the after-treatment. The intense cold causes contraction and emptying of the vessels of the neck: so that hæmorrhage gives less trouble during the operation, and the larger veins and the front of the neck are less contracted. In the after-treatment, the use of ice diminishes the tendency of the operation-wound to become diphtheritic; it also expedites healing, and keeps down swelling of the wound. After operation, pieces of gauze soaked in ice-water or laid upon pieces of ice are placed over the cannula and wound, and renewed every five or ten minutes. In this way, the inspired air is cooled.

**DMITRIEFF ON THE EXTERNAL USE OF CHLORAL-HYDRATE.**—In the *St. Petersburger Medicinische Wochenschrift*, December 1876, Dr. Th. Dmitrieff states that he has arrived at the following results with regard to the external use of chloral-hydrate. 1. It arrests various fermentative processes, such as ammoniacal and lactic acid fermentations, even in so weak a solution as one per cent. 2. A one per cent. solution applied to wounds discharging unhealthy offensive secretion quickly removes the bad smell; while at the same time (3) through its stimulating properties it produces a prompt development of healthy granulations, and (4) hastens cicatrization. 5. Chloral-hydrate applied externally has a locally sedative action. The observations were made partly on dogs and partly on men.

**MARTENSON ON PHOSPHATE OF IRON WITH CITRATE OF SODA.**—Martenson (*Pharm. Zeitschrift für Russland*, No. 10, 1876: abstract in *Allgemeine Medicin. Central-Zeitung*, No. 75) states that he has examined the combination of phosphate of iron and soda with citric acid, described by Creuse in the *American Journal of Pharmacy* (4th series, vol. iii), and finds that it is readily soluble in water and does not leave a taste of iron. An experience of its use, extending over two years, leads him to regard it as an excellent preparation of iron.

The compound of phosphate of iron with citrate of soda is of a clear olive-green colour, and is soluble in water in all preparations. In acid solutions (citric, hydrochloric, and acetic acids) it becomes green; in alkaline solutions, brown. A concentrated aqueous solution can be kept a long time without decomposition. The taste is faintly saline; when citric acid is added, pleasantly sour. The salt contains 25 per cent. of iron; its solution passes completely through parchment-paper and animal membranes, so that there can be no doubt of its capability of being absorbed. It is given in simple syrup, in seltzer or soda water, or in the form of pill or powder.



**STRISOWER ON THE ARREST OF HÆMORRHOIDAL BLEEDING BY ERGOTIN ENEMATA.**—K. Strisower describes in the *Moskwa Med. Gazeta*, No. 13, 1876 (abstract in *St. Petersburg Med. Wochenschrift*, No. 9, and *Allgemeine Med.-Chir. Zeitung*, No. 51,) the case of a man, aged 35, who had suffered for six months from profuse hæmorrhoidal bleedings, which had resisted all treatment; only once solution of perchloride of iron arrested the hæmorrhage for ten days. The patient's strength was greatly reduced. Dr. Strisower intended to inject ergotin subcutaneously, but was prevented by the patient, who feared the pain. He then injected a clyster containing five grains of ergotin in two ounces of glycerine. Ten days later, there had been no further bleeding; and in six weeks the patient had had no return of the hæmorrhage, and was steadily regaining his strength.

**STEINITZ ON THE USE OF HYDROBROMATE OF QUININE IN DISEASES OF CHILDREN.**—In a communication to the *Allgemeine Medicin. Central-Zeitung* (No. 53, 1876), Dr. Steinitz, of Breslau, gives the results of his experience of the use of hydrobromate of quinine in children's diseases.

He used it in an extensively prevailing epidemic of whooping cough, giving it generally in a mixture composed of 3 to 5 parts of the hydrobromate in 1,000 of syrup; the dose being a teaspoonful every two hours. In no case was it necessary to use any other remedies. The whooping cough had in 23 cases lasted on an average 10 weeks, and in 15 others 12 weeks, and in the use of the remedy the paroxysms became, in the course of a week, less frequent and milder. No after-effects on the alimentary canal were discovered. Three deaths occurred, all in very atrophic and scrofulous individuals, in whom other complications were present. Dr. Steinitz takes the opportunity of remarking that he prescribed in several cases the extract of castanea vesica, which has been extolled as a remedy, but without good results.

He also used the hydrobromate of quinine in nine cases of spasm of the glottis. Three of the patients died after only a few paroxysms. The remaining six recovered. The medicine was prescribed as stated above, and was borne well. In all the six cases the attacks diminished, at times varying from the third to the fifth week, in intensity as well as in frequency; and the duration of the disease was in no case longer than from four to six months. This result is satisfactory when compared with the previous course of the disease under the use of other medicines, such as bromide of potassium, oxide of zinc, valerian, and musk, none of which could be borne for several months together.

Dr. Steinitz has also given the hydrobromate of quinine in the dental convulsions of children, but cannot as yet speak of its efficacy in this malady. He regards it, however, as deserving a trial.

**CLEMENS ON BROMIDE OF ARSENIC IN THE TREATMENT OF EPILEPSY.**—Dr. T. Clemens, of Frankfort-on-the-Main, states, in the *Allgemeine Medicin. Central-Zeitung*, No. 42, 1876, that he has employed bromide of arsenic for twenty years in the treatment of diseases of the nervous system, especially epilepsy, and that he has obtained astonishing results with it. He uses a solution, of which he gives one or two drops in a glass of water once, or, if necessary, twice daily. He says that these doses may be given for months and even years, without producing any of the unpleasant effects of a long-

continued arsenical course. All his cases of epilepsy have been markedly improved by the bromide of arsenic, but in only two cases has it produced a complete cure, *i.e.* entire freedom from attacks. In many cases of incurable epilepsy, with idiocy and deformities of the skull, the fits were reduced in number from twenty in the twenty-four hours, to four or even two—a result that has been obtained by no other treatment in similar cases. He has found the action of the bromide to be greatly assisted by a liberal meat-diet and free exposure to air by day and night. Unlike bromide of potassium, this remedy does not require to be given in increasing doses; and as is the case with arsenical preparations, it often increases the bulk of the body. Dr. Clemens has employed the following formula since 1859, and thinks that it ought to replace Fowler's solution, which is irrational in its composition and uncertain in its action. This solution improves with time; the chemical union of the bromine with the arseniate of potash becoming more and more perfect. It is made by boiling a drachm each of white acid and carbonate of potash in half a pint of distilled water, then adding sufficient distilled water to make 12 ounces, and finally two drachms of pure bromine. After standing for a sufficient time, the result is a colourless solution, which, in Frankfort, is known as *Liquor Arsenici Bromidi Clementis*.

**CURCI ON THE ACTION OF SILVER ON THE MUSCULAR AND NERVOUS SYSTEMS.**—In a series of experiments on this subject, Curci (*Giornale Veneto di Scienze Mediche*, 1876) used a combination of one part of chloride of silver, three of hyposulphite of soda, and thirty of distilled water: chloride of sodium and hyposulphite of silver being formed. The solution had a sweet taste, followed by a somewhat metallic after-taste. Administered in this way, silver, while its effect is obtained as far as is useful, irritates neither the skin nor the mucous membrane. Injected subcutaneously, it produces slight inflammation and œdematous swelling of the areolar tissue; but it does not coagulate the blood, and is easily absorbed.

The following are some of the conclusions at which M. Curci has arrived.

Silver acts on the sensory nerves, and through them on the posterior columns of the cord. It first stimulates them and increases sensibility to pain, raises reflex excitability, and extends its action to the motor portion of the cord, producing tetanus and increased muscular tonus. It increases muscular irritability, and paralyses secondarily the sensory nerve-centres, especially the respiratory centre. At length it annihilates reflex excitability, respiration and circulation cease, and the heart remains in a state of diastole.

These results, according to Dr. Curci, show the inefficacy of silver in the diseases for which it has hitherto been in repute—myelitis, paralysis agitans, and locomotor ataxy. Where there are softening or induration, proliferation of connective tissue, and destruction of nerve-elements, and where the muscular tonus is weakened, no good action can be expected from a medicine which itself produces these conditions.

It can only be used with benefit in those cases of epilepsy which depend on excessive irritation of the spinal cord, while in those which arise from anatomical lesions it has no effect.

In hysteria, silver is inoperative as a remedy; in chorea, on the other hand, it is beneficial.

Excellent results are to be expected from silver in

nervous asthma, in cases attended with spasm of the inspiratory and bronchial muscles, since it reduces the irritability of the respiratory nerve-centre.

**SCROFULOUS ULCERS: RED-LEAD AND CINNABAR PLAISTER.**—In his wards at the hospital of Saint-Louis, M. Vidal has for several years made use of a plaister which he considers very efficacious in cleansing the greater number of ulcers and scrofulous sores. Its composition is as follows: Diachylon Plaister, 26 parts; Red-lead, 2.50 parts; Cinnabar, 1.50 parts.

These ingredients are thoroughly mixed and spread upon a piece of calico like an ordinary diachylon plaister; small pieces of the plaister are used a little larger than is sufficient to cover the ulcer. It is a very appropriate mode of treatment, and may be easily employed for a long time. M. Vidal recommends it strongly.

**FORMULÆ FOR LOZENGES.**—Under the head of "Extracts from Current Medical Literature" the *Saint Louis Medical and Surgical Journal* for December gives the following formulæ as containing the essential ingredients of several well known lozenges with some additions. They are easily compounded, and have proved useful in the conditions indicated.

Take of cubebs, in powder, 300 grains; benzoic acid, 200 grains; extract of liquorice, 800 grains; codeia, 16 grains; tragacanth, in powder, 100 grains; black currant or jujube paste, a sufficient quantity. Mix well, divide into 400 lozenges, and dry at a gentle heat. A lozenge may be slowly dissolved in the mouth every third hour, in huskiness of the voice attended by excessive secretion of mucus and congestion of the mucous membrane of the pharynx and larynx.

Take of guaiacum, in powder, extract of rhatany, in powder, of each 800 grains; extract of lettuce, in powder, 400 grains; tragacanth, in powder, 100 grains; black currant or jujube paste, enough to make 400 lozenges. A lozenge may be slowly dissolved in the mouth every second or third hour in acute or subacute inflammation of the pharynx and in the beginning of an attack of acute tonsillitis. A. HENRY, M.D.

#### RECENT PAPERS.

- Fissures occurring in Long Bones: with Remarks on V-shaped Fractures of the Tibia. By Dr. R. M. Hodges. (*Boston Medical and Surgical Journal*, January 11.)
- The Treatment of the Chancroid. By F. B. Greenough, M.D. (*Ibid.*)
- The Treatment of Inflammation of the Knee-Joint. By Dr. L. Mayer. (*Erztliches Intelligenz-Blatt*, January 30.)
- The use of Digitalis in the Treatment of Pneumonia. By Dr. Saucerotte. (*Gazette Médicale de Paris*, January 20.)
- The Treatment of Croup by Tincture of Eucalyptus Globulus. By Dr. Walcher. (*Gazette Médicale de Strasbourg*, 1877. Nos. 1 and 2.)
- On Peritonitis and its Rational Treatment. By M. Gubler. (*Journal de Thérapeutique*, January 11 and 25.)
- Subcutaneous Injections of Bromhydrate of Quinine in Intermitent Fever, in Sciatica, and in Consumptive Night Sweats. By Dr. Normand. (*Ibid.*)
- On the use of Salicine, Salicylic Acid, and the Salicylate of Soda in Therapeutics. By Dr. L. H. Potit. (*Bulletin Générale de Thérapeutique*, January 15.)
- On Treatment by Opiates in Cerebral Anæmia, due to Affections of the Heart, Insufficiency and Aortic Narrowing. By Henri Huchard. (*Journal de Thérapeutique*, January 10.)
- Rapid Cure of Osseous Caries, Ossifluent Abscesses, and Consecutive Fistula in Scrofulous patients, by Phosphate of Lime. (*L'Union Médicale*, January 27.)
- On the Danger attending the use of Opium in Bright's Disease, illustrated by a Case of Opium Poisoning. By Dr. W. W. Keen. (*Philadelphia Medical Times*, January 6.)
- On the action of Salicylic Acid in Diabetes Mellitus. By Dr. G. Müller. (*Berliner Klinische Wochenschrift*, January 15 and 22.)
- On a Means of arresting Whooping Cough. By Dr. Lasinski. (*Deutsche Medicinische Wochenschrift*, January 13.)
- The Therapeutic value of the Idio-Electric Douche. By Dr. Grazzini. (*Lo Sperimentale*, January.)

#### OBSTETRICS AND GYNÆCOLOGY.

**WING ON VAGINAL OVARIOTOMY.**—In a paper published in the *Boston Medical and Surgical Journal* for November 2nd, Dr. C. E. Wing relates a case in which an ovarian cyst was removed *per vaginam*.

On February 10th, 1876, he saw with Dr. Spalding of Lowell (the physician of the patient), and Dr. Warner, a lady whose history was as follows. She was thirty-two years old, unmarried, and was never very strong. The menses began at fourteen, were always regular, but accompanied by considerable pain. Twelve years ago, at the age of twenty, after lifting a heavy weight, she began to suffer pains in the back and across the lower part of the abdomen, which became much worse during the monthly periods, and had so increased that for the last six years the patient had been obliged to use morphine, and, at times, etherisation, when menstruating. Five years ago a local examination showed a retroverted uterus, for which pessaries were tried without much result; and a year later a body was felt in Douglas's *cul-de-sac*, which was thought at the time, by Dr. H. R. Storer, who saw the patient, to be an ovary. For two years the patient was confined to her room, and part of the time to her bed; but for the last year or two she had been better, and able to go about a little. She was habitually constipated, and defæcation, even after the use of enemata, was very painful. Micturition was frequent; her appetite was poor; there were no febrile symptoms. The patient was emaciated.

An elastic but not distinctly fluctuating mass was felt in Douglas's *cul-de-sac*, pressing the uterus forward towards the pubes. The fundus uteri was turned somewhat backward, but was movable with the sound. The latter entered to the normal depth. With the patient under ether, the tumour could not be pressed from its position, and previous efforts in the same direction had failed. Examination *per rectum* showed that the mass pressed the bowel against the sacrum, and explained the constipation and painful defæcation.

An aspirator-needle was passed into the mass from the vagina, but only a small amount of dark, bloody fluid was withdrawn. Dr. E. G. Cutler examined this and reported as follows. "The fluid (about two drachms in quantity) contained a large percentage of albumen. Under the microscope many red blood-corpuscles were seen, which had lost their characteristic shape and had become irregularly crenated. The surfaces of many showed a few spots not unlike small globules of fat[?]. In addition were seen numerous granular cells in various stages of fatty degeneration, varying in size from that of a white corpuscle to double that size. Hæmatin crystals; no others. Diagnosis of fluid, old hæmorrhagic effusion." The tapping was not followed by any symptoms.

On March 30th, the aspirator was again used; several ounces of the same fluid were removed, and the mass much diminished in size. Some time afterwards the patient began having occasional slight chills followed by fever, nausea, and headaches; in fact, a mild septicæmia. She continued to lose strength and appetite, though not confined to bed.

On April 19th, an examination showed the mass behind the uterus to be as large as ever, and more tense and cyst-like. Upon passing an exploring



needle from the vagina, a few drops of exceedingly offensive matter escaped.

With the aid of Sims's speculum and position, the parts being well drawn down towards the vulva with tenacula, and care being taken to avoid wounding the rectum, an opening was made through the upper part of the vagina and the peritoneum into Douglas's *cul-de-sac*. Passing his finger through this, Dr. Wing distinctly made out a small ovarian cyst, about the size of an orange, fixed in the *cul-de-sac* by some loose adhesions which easily gave way before his finger. The opening having been enlarged, the cyst was seized with strong forceps, opened and evacuated, then twisted to diminish its size, and pulled through into the vagina. There was no proper pedicle, but the uterus, tipping backward, allowed the broad ligament with the Fallopian tube to come well into the vagina. Dr. Wing intended here to apply a ligature and cut away the cyst; but Dr. Warner, in making a digital examination, finding the attachments loose, attempted enucleation, succeeded in separating the tumour, and brought it away. There was some bleeding, which soon ceased entirely, and as the uterus went forward the broad ligament slipped back into the abdominal cavity. No ligature whatever was used; but, a coil of small intestine appearing at the opening, Dr. Wing inserted three silk sutures and closed the wound sufficiently to prevent hernia, but left room to pass a catheter, should there be any collection to wash out. The patient was then put to bed.

The subsequent history of this case presents nothing remarkable. The *cul-de-sac* was washed out daily with a double catheter up to April 29th, when vaginal injections were substituted. She was discharged on May 18th. Dr. Wing again met her in May 1876, after the operation. She was no longer using morphia, and was increasing in weight and strength. The menses had been regular since the operation except within the last two months, when the flow had appeared every three weeks. This she attributed to the fact that, through illness in the family, the cares of the household had devolved upon her. To the same cause she attributed a backache which she had had for a week or more, having been previously free from it.

In commenting on this case, Dr. Wing remarks that vaginal ovariectomy is an operation of recent date, having been first done by Thomas, of New York, who, on February 6th, 1870, removed a small ovarian tumour, tapping several cysts in so doing. The case was published in *The American Journal of the Medical Sciences*, April 1870, and is quoted in full in Thomas's *Diseases of Women* (1875), where the author says of the operation, "It is fully as easy of performance as abdominal ovariectomy, is evidently attended by much less danger, holds out to the patient the opportunity of avoiding many weary months of suspense in anticipation of that more grave procedure, is equally applicable to multilocular and to unilocular cysts, gives abundant facility for securing the pedicle, and is, so far as my knowledge and experience go, defensible as a surgical procedure against all but theoretical objections." Dr. Peaslee, who was present at the operation by Thomas, did not form so favourable an opinion, and in his treatise on Ovarian Tumours says that, upon purely surgical grounds, vaginal ovariectomy is, he thinks, hardly defensible.

Gilmore, of Mobile, operated successfully September 6th, 1873, reporting the case in the *New Orleans Medical and Surgical Journal* of November 1873. The tumour was of the size of an orange. He formed

so favourable an opinion of the operation that he proposed in the future, in case of a suspected unilocular cyst low down, to lay open the vagina, tap the cyst, and, if possible, extract in this way, holding the abdominal incision in abeyance.

Batley, of Georgia, March 30th, 1874, removed a small ovarian tumour by the vaginal operation, the patient recovering.

Davis, of Wilkesbarre, in 1872, successfully removed an ovarian cyst, weighing nine pounds, through the vagina. In rupturing adhesions, which were abundant, his hand was passed high up into the peritoneal cavity, the sac extending several inches above the umbilicus, and forming a tumour about the size of a pregnant uterus at the seventh month of utero-gestation.

The question of the advisability of the vaginal operation for ovarian tumours, Dr. Wing says, would seem to be limited to the cases of very small ones, particularly such as have not risen out of the pelvis, but this is the stage in which, as a rule, as Dr. Peaslee remarks, "they give no special inconvenience to justify interference in any way." The vaginal operation then is done when the patient is slightly, if at all incommoded by the growth, appears to her friends in good health, and would perhaps remain comfortable for several years; while, on the contrary, abdominal ovariectomy is performed at a time when the patient feels its necessity, and is anxious for relief from her constantly increasing sufferings, with death the only result if the operation is not resorted to.

The vaginal operation is certainly not easier, and complications are likely to prove more troublesome than with the abdominal opening. The trouble anticipated by Dr. Peaslee in regard to the pedicle does not seem to have been met with as yet. In the present case there was no proper pedicle, yet the broad ligament was brought so far into the vagina that it could have been tied without great difficulty.

The fact that the intestine appeared at the vaginal cut is interesting, as lately some high authorities have held that the small intestine is never found in Douglas's *cul-de-sac*.

ARNING ON CYST OF THE BROAD LIGAMENT: REMOVAL: DEATH SEVENTY-SIX HOURS AFTER THE OPERATION.—In the *Allgemeine Wiener Medizinische Zeitung* for October 31st, 1876, Dr. Arning of Hamburg relates the case of a patient who came under his care in November 1873. She was forty-five years old; had had six children, the youngest four years old; menstruation was regular. Since 1871 the abdomen had been gradually enlarging, but she had suffered little in general health, except occasional colicky pains. The tumour was rather towards the left side, fluctuation superficial and uniform. *Per vaginam*, the tumour was felt in front and somewhat to the left of the uterus, which was retroverted, and somewhat enlarged, the sound passing easily. A thin band, somewhat tender, was felt passing across the front of the tumour, and taken to be the Fallopian tube. The tumour continued to increase, and on December 6th it was tapped. The fluid was colourless, of specific gravity 1007. It contained a small quantity of albumen and of sugar, with a little cholesterine and urea. After its evacuation nothing could be felt of the tumour. It was concluded that it was probably a cyst of the left broad ligament. For some time the cyst did not refill. In the spring of 1876, the patient suffered from eczema, after the cure of which it again began to enlarge, and during

the winter of 1874-75 its size became considerable. In June 1875 it was tapped for the second time, and a slightly greenish, clear fluid evacuated. It was of specific gravity 1017, contained albumen and urea but no paralbumen nor cholesterine. After the end of September the cyst again began to fill. In May 1876, Mr. Spencer Wells visited Hamburg, and saw the patient. His opinion was that the cyst was not parovarian, but ovarian, and that secondary cysts could be felt at its lower part to the left side, and he therefore recommended an operation. He thought also that there was a short pedicle, and that the clamp could be used.

The operation was performed on May 16th. After evacuation of the fluid the large intestine came into view as the cyst was drawn forward, and it was seen that the peritoneum passed at once from it over the surface of the tumour. It was thus a cyst of the broad ligament, which had grown into the meso-colon of the sigmoid flexure. The mass taken by Mr. Spencer Wells for a secondary cyst proved to be the healthy left ovary. The peritoneal covering of the cyst was divided, and it was completely removed by enucleation. A small pedicle, containing the vessels, and the Fallopian tube, was obtained by splitting the broad ligament. This was tied with carbolised gut and dropped, and a few vessels were secured in the same way. On the morning of the second day the pulse rose to 140, and the temperature to 102.2° F. On the third day the wound was opened, a drainage-tube passed through Douglas's fossa into the vagina, and the peritoneal cavity washed out with carbolic acid. The patient sank, however, the following morning. The layers of the broad ligament were found to have united, but, when they were separated, foetid gas escaped from the cellular tissue beneath. No hæmorrhage had taken place. The author concludes that the diagnosis between ovarian and parovarian cysts is, as yet, sometimes uncertain. He believes also that it cannot be ascertained whether a parovarian cyst is peridunculated or not, and that, if it be not, the operation for its removal is extremely dangerous, because the subperitoneal cellular tissue must be laid open. He thinks that even repeated tapping is preferable to the major operation, so long as the general health does not greatly suffer.

**GUBLER ON GLYCOSURIA DURING THE PUERPERAL STATE.**—In a note communicated to the Biological Society of Paris (*Gaz. Méd. de Paris*), M. Gubler states that a transitory glycosuria may occur. His conclusions are these.

1. Glycosuria is not a normal phenomena of the state of lactation.

2. It shows itself on the suspension or premature suppression of lactation, provided the nurse be in good health and not affected by any serious constitutional disturbance.

3. In other terms, glycosuria only appears as a consequence of a rupture of the equilibrium between the production and consumption, giving rise at first to a lactosemia comparable to a super-albuminosed blood from which is derived the albuminuric dyscrasia.

He has never seen transitory albuminuria accompany glycosuria in these pathological conditions.

**STORER ON THE UTERINE EBB.**—In the *Edinburgh Medical Journal* for January 1877, Dr. Horatio R. Storer contributes an article "On the Importance of the Uterine Ebb as a Factor in Pelvic Surgery". The paper was originally presented to the American

Gynæcological Society. He considers the menstrual molimen as something more than a mere technical phrase. It is a reality, that not merely determines and is evidenced by the normal catamenial discharge, but that affects reflexly, and probably even more directly, the woman's whole being.

To consider the catamenial function as wholly a local one in effects and in origin, is not merely scientifically wrong, but has doubtless often caused the death of a patient.

With the commencement of menstruation the uterine ebb or catamenial reflux has practically begun, and it is during this ebb that all operations should be performed.

The extraction of a tooth during gestation, or even the filling of one, if at the uterine flow, may result in the expulsion of the fœtus; while the severest pelvic operations, as the removal of vaginal tumours, and even of ovarian cysts or abdominal fibroids, which may be thought necessary to preserve the life of either mother or child, may be, and have repeatedly been, performed without curtailing the progress of gestation.

For pelvic operations, all other things being equal, it is better to select the week immediately following the cessation of the catamenia, or, as nearly as can be ascertained, corresponding with what would have been this time had they appeared.

ARTHUR W. EDIS, M.D.

**JENKINS ON CONGENITAL ULCERATION OF THE UMBILICAL CORD.**—Dr. J. F. Jenkins (*Amer. Jour. Obstet.* October 1876) says that he attended a lady in premature labour from albuminuria, at the end of the eighth month. When the membrane burst, the liquor amnii discharged was seen to be almost pure blood. The child was dead and very pallid, apparently exsanguinated. He estimated that there was at least a quart of blood in the amniotic cavity. On looking for the origin of the hæmorrhage, a small perforation was found in the umbilical cord, about half an inch from its abdominal insertion. The cord was much narrowed at this point, but not twisted. A microscopical investigation showed that the fatal hæmorrhage into the amniotic sac resulted from rupture of the umbilical vein depending upon fatty degeneration and consequent fragility.

**EMMET ON THE PROPER TREATMENT OF LACERATION OF THE CERVIX UTERI.**—At the meeting of the New York County Medical Society, December 11, 1876, Dr. Emmet said his operation of bringing the vivified flaps together should not be attempted until the following complications have been removed: cystic disease of follicles; pelvic peritonitis or cellulitis; displacement of the uterus; presence of cicatricial tissue at the apex of the cleft; and congestion of the uterus from any cause.

In Dr. Emmet's operation, the chief object to be kept in mind is the accurate adjustment along the outer or vaginal surface of the cervix, for if this is done, no trouble will occur in approximating the inner surface. After a week the sutures can be removed, but care must be taken in their withdrawal that the adherent surfaces be not torn apart.

FANCOURT BARNES, M.B.

#### RECENT PAPERS.

Spontaneous and very extensive Rotation of the Head during Delivery, not followed by a similar movement of the Trunk. By M. P. Budin. (*Progrès Médical*, January 30.)  
Influence of Posture on Women. By Dr. Aveling. (*Obstetrical Journal*, February, 1877.)



Instrumental Delivery without the Knowledge of the Patient. By Dr. Braithwaite. (*Ibid.*)  
 Novel Method of Removal of Intra-uterine Musculo-fibrous Tumour. By Dr. De Gorrequer Griffith. (*Ibid.*)  
 Conversion of Face-Presentation into one of Vertex by aid of Knee-elbow Position. By Dr. J. R. Humphrey. (*American Journal of Medical Science*, January.)  
 Pelvic Adhesions in Ovariectomy. By Dr. Walter F. Atlee. (*Ibid.*)  
 Absence of Uterus, with a previous History of Chronic Inversion of the Organ, and Removal by Ligature. By Dr. W. R. Whitehead. (*Ibid.*)

## DERMATOLOGY.

ALLBUTT ON INTERNAL SKIN-DISEASES.—Dr. T. Clifford Allbutt (*Archives of Dermatology*, Oct. 1876) believes that the mucous membranes are liable to be affected by diseased conditions of the same nature as those which constitute the ordinary skin-diseases. There is a bronchial eczema "which may be distinguished from common bronchial catarrh partly by its symptoms and partly by its occurrence in persons otherwise known to be liable to such diseases externally." There is little general disturbance of the general health; the physical signs, consisting chiefly of sibilant rales, are confined to the larger tubes, and it resists ordinary treatment. Psoriasis he describes as frequently affecting the colon. "This disease is marked by attacks of uneasiness, heat, irritability, or even of positive pain in the abdomen, with irritability of the bowels, and the evacuation of shreds of membrane, or even casts of the intestine." It occurs generally in adults, and in most of Dr. Allbutt's cases has been associated with external psoriasis.

LÉOPOLD ON FEBRILE URTICARIA AFTER LEECHES.—Léopold (*Révue des Sciences Médicales*, Oct. 1875, cited in the *Archiv für Dermat. und Syphilis*) describes a case in which eight leeches were applied to the pubic region of a hysterical woman, and she forthwith suffered from general urticaria with fever. The author recalls a case of Scanzoni's, in which the application of leeches to the cervix uteri was followed by urticaria, and considers the process as being due to a stimulus applied to the vascular system through irritation of a nerveplexus.

Another case is cited as reported by De Ranse (*Gaz. Méd.* 1875, No. 38), in which a man swallowed a wasp in a glass of beer, and immediately afterwards felt that he was stung in the œsophagus, on the right side below the thyroid. An eruption of urticaria took place first on the neck, and then on the rest of the body.

WUTZDORFF ON THE ETIOLOGY OF PSORIASIS VULGARIS.—Dr. Edgar Wutzdorff (*Vierteljahresschrift für Dermatologie und Syphilis*, 1876, 3 Heft.) believes that, whilst the disposition to psoriasis is hereditary, the parts of the body on which it develops are determined by irritation from external causes. The localisation on the elbows and knees is determined, for example, by the fact that these prominent parts are naturally exposed to prepure and rubbing; whilst the skin, being immediately over the bone, receives no protection from a cushion of subcutaneous soft tissue. A similar explanation is given of cases in which a psoriatic patch develops on the forehead on the part which is compressed by the hat. This view is supported by experiments like the following. He scratched the fore-arm of a psoriatic girl with a blunt pen-knife, and in about three weeks

a psoriatic patch had developed on the abraded surface. In another case a patch developed on the shoulder of a patient after the part had been cauterised by a solution of one in five of caustic potash. The same view is developed by a consideration of the sources of irritation to which the various localisations of psoriasis are attributable. For further and interesting details, reference to the original paper is recommended.

KAPOSI ON NEUROSES OF THE SKIN.—Kaposi, in the *Archiv für Dermatologie und Syphilis*, 1876, 3 Heft., publishes an extract on neurotic affections of the skin, from the forthcoming and last volume of Hebra's work on skin-diseases. He states that the affection described by Dühring, of Philadelphia, as *pruritus hiemalis*, is also observed in Vienna. He considers it as associated with the dry and harsh state of the skin which is produced by the cold, and that it may be placed in the same category with the itching and subsequent eczema connected with varicose veins, excessive sweating, mechanical pressure, scratching, water, soap, &c.

GUSSENBAUER ON THE FORMATION OF PIGMENT IN MELANOTIC SARCOMA, AND IN SIMPLE MELANOMA OF THE SKIN.—Gussenbauer (*Virchow's Archiv*, vol. 63, 1875) says that there are three stages in the formation: 1. Slowness, and finally arrest of the circulation with dilatation of the capillaries; 2. Solution of the hæmoglobin in the blood-plasma, and its diffusion through the vascular wall, and its imbibition by the cellular elements of the tissues; 3. A deposit of the pigment in the form of granules. G. THIN, M.D.

RIESEL ON THE PATHOLOGY OF HERPES ZOSTER.—O. Riesel (*Deutsche Med. Wochenschrift*, No. 23, 1876, and *Centralblatt für die Med. Wissenschaft*, No. 36), describes a case which, he thinks, tends to disprove Bärensprung's theory of the origin of herpes zoster from trophic nerve-disturbance. After extirpation of the left mamma in a somewhat anæmic woman aged 36, the left arm of the patient was laid upon a horse-hair cushion in such a manner that pressure was made a finger-breadth above the inner condyle. The next day pain was experienced on the volar side of the fore-arm, and the day following a great number of infiltrations, which became transformed into the efflorescence of herpes a few days later. The further course of the disease was normal. Riesel refers to the fact that the injury affected almost exclusively the trunk of one of the principal nerves, just after its passage through the fascia into the subcutaneous connective tissue, and that, as in Bohn's cases, a brief and trifling injury produced the eruption. The author shows analogies between this case and those of traumatic paralysis following pressure upon or bruising of motor nerves, particularly in the arm. In contusion of nerve-trunks, according to Erb, the inflammation excited in the neurilemma is transmitted along the course of the nerve, until it reaches its finest twigs and even the muscles. In a similar manner, Riesel assumes in the case of herpes zoster an inflammation carried from the seat of injury to that of the eruption in the line of the nerve.

## RECENT PAPERS.

A Contribution to the Etiology of Psoriasis. By Dr. Neumann. (*Allgemeine Wiener Medizin. Zeitung*, January 2.)  
 On Tinea Favosa. By M. Lailler. (*Le Progrès Médical*, December 16, 1876.)  
 On the Treatment of Disfigurements of the Skin. By Dr. E. Ory. (*Le Progrès Médical*, January 6, 1877.)

## REPORTS OF FOREIGN SOCIETIES.

### ACADEMY OF MEDICINE IN PARIS.

December 5. *Localisation of the Functions of the Brain.*—M. Maurice Raynaud reminded the Academy, in reference to M. Proust's communication, of a note laid by him before the Society of Anatomy. He saw, in the case of a phthisical patient, a monoplegia of the right arm make its appearance three days before death; at the necropsy he was able to discover the existence of a small focus of softening situated on the ascending parietal convolution, at a point precisely which Dr. Ferrier indicates as being, in the ape, in relation with the motility of the arm.

*Relations between the Disturbances of General Motility and Lesions of the Cortical Layers of the Fronto-Parietal Convolutions.*—A paper on this subject was read by M. Foville. His conclusions were as follows. General paralysis is characterised symptomatically by troubles of motility; anatomically by constant lesion of the fronto-parietal convolutions. The discoveries of Hitzig and Ferrier throw an unforeseen light on the signification of these lesions, which are the direct cause of the motility (trembling, contraction, ataxy, grinding of the teeth, inequality of the pupils) which is observed in general paralysis. The localisation and the intensity of these regulate the localisation and the intensity of motor disturbances in this disease.

December 12. *Pathological Liquids of the Peritoneal Cavity.*—M. Méhu read a memoir on the pathological fluids of the peritoneal cavity. The fluid of ascites contains the same elements as the serum of blood, without, however, the proportion of albumen ever being so abundant; the proportion of fibrine is also weak, for the ascitic liquid never coagulates, like that of the pleura or of hydrocele. The presence of leucocytes in some abundance is the rule, and has no significance. The proportion of fixed matters contained in a *kilogramme* of ascitic liquid does not exceed ninety *grammes*, nor fall below fourteen. The mineral salts (from seven to nine *grammes* per *kilogramme*) undergo but slight variations. The fluids which are poor in fixed matters reproduce themselves more quickly, and imply a graver prognosis than the fluids of a denser character.

December 19. *Elimination of the Internal Membrane of the Stomach and of a part of the Esophagus.*—M. Laboulbène communicated a remarkable case, which occurred in a man 59 years of age, who accidentally swallowed some mouthfuls of strong sulphuric acid. Milk was at once administered, which brought on immediate vomiting. The next day he was admitted into M. Laboulbène's wards, complaining of pains at the epigastrium, along the sternum, and between the two shoulders; vomiting was incessant, and expectoration perpetual. There were phlyctenæ on the back of the tongue and the palatine arch. The treatment consisted of milk mixed with lime-water and magnesia. Fifteen days after his entrance into hospital, the patient expelled an elongated false membrane, which was evidently made up of fragments of the mucous membrane of the esophagus. The next day, after a fit of suffocation, he expelled a blackish mass, formed from a large portion of the mucous membrane of the stomach. Thenceforth there was a notable improvement in the patient's condition, though the prognosis was still

very uncertain.—M. Gubler doubted whether the membranes of the stomach were concerned, basing his opinion on the absence of pepsine-glands, a point to which M. Laboulbène himself had called attention. M. Gubler was of opinion that it was a false membrane, similar to that met with in diphtheria, resulting from irritative exudation, and not from sphacelus.

January 21. *Adenopathy in Whooping Cough.*—M. Gueneau de Mussy laid before the Academy some anatomical specimens obtained from the Children's Hospital, in children who had died of whooping cough, showing a considerable swelling of the lymphatic glands, compressing the pneumogastric and laryngeal nerves. These evidences supported M. Gueneau de Mussy's opinion, that the spasmodic cough of whooping cough is referable to affection of the bronchial gland. These facts explain: 1. Why the spasmodic cough only appears towards the second or third week of the attack of whooping cough, after the catarrhal or exanthematous attack, when the laryngeal and bronchial catarrh has reacted on the glands; 2. Why the cough is so obstinate, and sometimes lasts for months; 3. Why, in fine, it frequently recurs under the influence of a cold, or a chill, bringing on a fresh outburst of the congestion of the glands. In the same way may be explained cases of whooping cough without spasmodic cough, which are in precise relation to the absence of the reaction of the affection on the lymphatic glandular system.—M. Colin had observed cases of wheezing in animals, arising from the compression exercised by the swollen bronchial glands on the pneumogastric nerves. These adenopathies were always consecutive on broncho-pulmonary lesions.—M. Hardy was of opinion that there was no necessary relation between the congestion of the bronchial glands and whooping cough; that the latter might exist with its characteristic spasms in the absence of any adenopathy, was proved by numerous necropsies. Besides, if adenopathy were the true cause of this symptom, it would not so often disappear with extreme rapidity after change of air or the use of baths of compressed air.—M. Gueneau de Mussy replied that, if adenopathy had not been discovered in some necropsies it was because it had not been looked for with the necessary care. The rapid disappearance of the spasmodic cough was explained by the rapid diminution frequent in congestion of glands. Also, intermittence was met with in the most distinct and lasting organic affections.—M. Colin confirmed M. Gueneau de Mussy's opinion. He had frequently had the opportunity of verifying the facility with which certain glandular swellings were dissipated.

*Trephining and Cerebral Localisation.*—M. Lucas-Champonnière read a paper on the indications drawn from cerebral localisation for the operation of trephining. He pointed out the marks essential for determining the place of the fissure of Rolando, around which are grouped the principal motor points of the cortical substance of the brain. The apex of the fissure in the male subject is on the average 53 millimetres, and in the female 48 millimetres behind the anterior fontanelle; that is to say, from a vertical line passing through the external auditory meatus. The lower extremity of the fissure will be found by tracing a diagonal line 70 millimetres in length behind the orbital apophysis, and at the posterior extremity of this line another vertical one, 30 millimetres in length. By connecting the two points by a straight line, the direction of the fissure of Rolando will be discovered. The trephining should be per-



formed on the middle part of this line, if the paralysis be serious and extensive; if a paralysis of the lower limb be diagnosed, the trephining must be towards the top of the line and backwards; if the upper limb be paralysed, the lower extremity should be trephined.

### ACADEMY OF SCIENCES IN PARIS.

Dec. 4. *Iodide of Potassium*.—A note by M. Jacobs treated of the employment of iodide of potassium in lead-colic and paralysis. The colic of lead-poisoning is always accompanied by spinal congestion; and after cupping, emeto-cathartics, and drastic purgatives, intended to combat the acute symptoms, have been employed, iodide of potassium is the most suitable remedy to overcome the cause of the evil. It is taken in doses of from 1 to 10 or 15 grammes (15 to 150 or 225 grains) *per diem*, in increasing or diminishing doses until a cure is effected.

*Sensation*.—M. Ch. Richet presented a note on sensation compared to motion. The principal results of his experiments were as follows. 1. Sensibility under the influence of a prolonged stimulation, slowly decreases, but rapidly returns to the normal condition. 2. Isolated excitations do not produce a sensitive effect, but repeated excitations produce an effect so much the greater as they are more frequent. 3. For repeated and reciprocally equal excitations, the moment of perception is so much the more retarded according as the intensity of the excitations is less, and so much the more accelerated as their intensity is greater. 4. The phenomena known under the name of education of the perception may drop into cumulative facts. 5. If the excitations be very weak, a limited number of them may be taken without obtaining a sensory effect, whilst if the number be unlimited, they always end by producing a perception. 6. The transmission of a stimulus is always very rapid, but the persistence of the sensitive effect may have a longer or shorter duration proportional to the intensity of the stimulus. A general law in the following terms may be established. The number of excitations necessary to bring on a perception or a movement is in inverse proportion to the intensity and the frequency of these excitations. Here there is a striking analogy between the work of the muscles and the work of the nerve-centres.

*Painful Excitations*.—M. F. Franck communicated his experimental researches on the cardiac vascular and respiratory effects of painful excitations. The general conclusions of this memoir were that an animal or a man submitted to painful peripheric excitations may present the cardiac disturbances indicated for two reasons, which are connected, and tend to the same result in a normal subject: first, the pure and simple centripetal transmission along the sensitive nerve, and the central conduction (grey substance, etc.) afterwards the pain perceived which reacts on the inhibitory centres of the heart, adding its influence to the first. If one of these two causes, the cerebral perception, were suppressed, the effect would still be produced; in animals without hemispheres it would be an ordinary reflex, nothing more. If the cerebral hemispheres be at once exposed to the painful shock (sudden emotion) without producing any impression on the peripheric nerves, stoppage of the heart will also be produced.

December 11. *Urea in the Blood*.—M. P. Picard communicated his researches on the urea of the blood. In operating by Millon's reagent, it is easy

to suppose the venous blood contains less urea than arterial blood. It is, however, necessary to note that this difference disappears completely when the blood has been exposed for some time to the air. The writer likewise admitted that the difference does not consist in the quantity of urea, which is a fixed substance, but in the presence of a destructible matter, revealed by Millon's agent and in the arterial blood only.

*On the Fixed Cells of Tendons and their Protoplasmic Expansions*.—M. J. Renaut had found that eosine soluble in water fixed itself on protoplasmic expansions and coloured them strongly. Having employed this substance for the examination of tendinous cells, he had been able to determine the following fact: the network of stellate figures underlying the epithelioid layer of the tendon is not formed by cells of ordinary connective tissue, but by protoplasmic expansions of the tendon-cells near the surface, which are abundant at this point and anastomose together.

*Bromhydric Ether*.—M. Rabuteau presented a paper on bromhydric ether. Bromhydric ether, or bromide of ethyl ( $C^2 H^5 Br$ ), is a colourless liquid of agreeable odour boiling at 40 Cent. (104 Fahr.), having a density of 1.43, and burning with difficulty. The author had made on this ether (of which the boiling point and density were the same as the chloroform and sulphuric ether) various researches, of which the conclusions were as follows. 1. The bromide of ethyl, when absorbed by the respiratory passages, produces complete anæsthesia as rapidly as, and even more so than, chloroform. This result has been observed in frogs, guinea-pigs, rabbits, and dogs. At the end of five, and even sometimes in two minutes, of inhalation performed by the aid of a sponge saturated with bromide of ethyl, the dogs were completely anæsthetised. 2. Animals recover consciousness more rapidly than when anæsthesia has been produced by chloroform. 3. Having injected under the skin of dogs, before anæsthetising them, solutions of chlorhydrate of narcein or chlorhydrate of morphine, M. Rabuteau observed an action analogous, though perhaps inferior, to the simultaneous action of narcein, or morphine and chloroform. 4. Hydrobromic ether is neither caustic nor even irritant in comparison with chloroform. It may be injected without difficulty, and applied without danger, not only to the skin, but in the internal auditory meatus, and to the mucous membranes. It is preferable in this respect to chloroform, which is very caustic, and to sulphuric ether, of which the injection in an uncombined state is almost impossible. 5. Bromide of ethyl taken into the human stomach in doses of from one to two grammes (15 to 30 grains), does not produce anæsthesia as it does when absorbed in a sufficient quantity by the respiratory passages. It soothes pain, and does not interfere with the appetite. 6. This anæsthetic is almost insoluble in water, although water in which it has been shaken acquires a pleasant taste and smell. Frogs placed in water saturated with bromide of ethyl are anæsthetised at the end of from ten to fifteen minutes. 7. Bromide of ethyl is eliminated almost, if not quite entirely, by the respiratory passages, however it may have been absorbed; traces only of it (if any at all) are discovered in the urine, when it has been taken into the stomach; very small quantities of it may be discovered in this liquid when it has been absorbed by inhalation. Bromide of ethyl is not decomposed in the organism into an alkaline bromide, such as the bromide of sodium, a salt easily eliminated by the

kidneys. In testing for bromide of ethyl in urine, M. Rabuteau used an apparatus consisting of a flask containing urine, heated in a water-bath, and having two glass tubes passing through the stopper, one of which communicated with the external air, the other with a vertical test-tube filled with dried chloride of calcium; secondly, of a porcelain tube containing pure lime, heated to a redness; thirdly, of a hydraulic pump communicating with this. By setting the pump in action, a current of air is established in the apparatus, which carries with it any bromide of ethyl that may be in the urine; this bromide is afterwards decomposed by the lime, bromide of calcium being formed. On the other hand, if from fifty to one hundred grammes of the same urine be warmed in a porcelain capsule, the evaporation completed with a small quantity of pure potassium, the residue calcined by a red heat, and this residue treated with distilled water, it is impossible to discover in the clear liquid thus obtained traces of bromide, by agitating it in a glass tube with sulphate of carbon and nitric acid charged with nitrous vapours. Consequently, bromide of ethyl does not give rise to an alkaline bromide in the organism.

*On the Influence of Organic Dust in the Air in the Production of Epidemics.*—M. Marié-Davy said that, in examining the dust contained in the flooring and on the walls of the rooms of the Prince Eugène Barracks, large numbers of parasites, algæ (the *coccocloris Brebissonii*), vibriones, bacteria, and monads were found. They were found, likewise, in some houses in course of demolition. It is probable that these organic matters, mixed with the atmospheric dust, are the cause of the localisation of epidemics in certain quarters. The writer proposed as a preventive measure in barracks, to substitute lime-wash for whitening and size in the whitening of the walls, as well as to scrub the floors with soft soap, and to gradually replace the wood floors by asphalte. The influence of organic dust in the production of epidemics has still to be thoroughly investigated, and M. Marié-Davy proposed to continue his researches on the subject.

Jan. 3, 1877. *Movements of the Brain.*—M. M. Giacomini and Mosso laid before the Academy the photograph of a woman, aged 37, who, in consequence of a syphilitic affection of the skull, lost a large part of the frontal as well as of the two parietal bones. In order to study the movements of her brain by the graphic method, one of Marey's exploratory cylinders was arranged over the opening in the cranium and placed in communication with a lever-cylinder by an India-rubber tube. The investigations in the case of this woman (who is now completely cured) were commenced in January 1876, and afforded very remarkable results in relation to the physiology of the cerebral circulation. The tracings laid before the Academy, and which will be published in the *Archivio delle Scienze Mediche*, shewed that there are in the human brain, even during the most absolute bodily and mental repose, three different kinds of movements: 1, pulsations, which occur at each contraction of the heart; 2, oscillations, which correspond with the respiratory movements; 3, undulations, which are larger curves due to the movements of the vessels during attention, cerebral activity, sleep, and other causes, which, up to the present time, are not known to us. They may be termed spontaneous movements of the vessels.

## REVIEWS.

*Traité de la Diphthérie.* Par A. SANNÉ, Docteur en Médecine, etc. Pp. 654. Paris: 1877.

This is probably the best and the most complete work on Diphtheria which has yet appeared in the French or any other language. The work, or rather the series of Memoirs written by Bretonneau, forms no exception to this eulogy; for, at the time when the physician of Tours was engaged in his well-known researches, the whole subject of Diphthérie, as it was then called, was in a progressive or transitional state, and many views which he put forward were modified or retracted even by himself during the progress of investigation and in consequence of the development of new facts. It was a great characteristic of Bretonneau's mind that he advanced his doctrines only on the basis of clinical facts and *post mortem* examinations; and as soon as he found that experience no longer supported any of his theories or modes of practice, they were at once candidly abandoned. It is also to be recollected that Bretonneau never wrote any complete treatise on the subject to which he devoted so much attention, and hence the collection of his Memoirs presents little more than a miscellaneous and occasionally discordant series of pictures, facts, and suggestions, the later of which sometimes supplemented and sometimes contradicted the views advanced in the earlier essays. What is admirable in Bretonneau's Memoirs is the thorough honesty and good faith of the writer, who relates only what he has seen and done, and who, when he advances theories, does so only on the foundation of well-ascertained facts. During the lifetime of Bretonneau, who reached an advanced age, he had the gratification of finding his opinions verified and most of his suggestions adopted by many of his contemporaries, among whom the most distinguished was Trousseau, his former pupil, and who, in conjunction with the no less distinguished Velpeau, had in fact assisted him at Tours in making the series of *post mortem* investigations on which the pathological nature of diphtheria is mainly established. The literary merits of Bretonneau, however, must also by no means be ignored; for, in addition to describing the epidemics he witnessed at Tours and its vicinity, he succeeded, by a series of laborious historical researches, in establishing the identity of the disease, then and there presented to his observation, with those destructive epidemics which, under various names, had prevailed, especially among children, in former periods and in different parts of the world. In this brief glance at Bretonneau's labours and researches, we must add that one of his most meritorious achievements was his successful performance of the operation of tracheotomy at a time when this proceeding was surrounded with difficulties, and was almost universally discouraged; while his own graphic description of the operation and of the numerous improvements which he introduced into it must always be regarded as an enduring monument of literary ability.

Since the first appearance of Bretonneau's Memoirs, the whole subject of diphtheria has undergone thorough revision and great amplification; new facts in abundance have been added, some mistakes have been rectified, and accumulated experience has enormously extended the field of observation in all the countries of the globe. The main facts, however, as established by Bretonneau, remain undisputed;



and diphtheria, once regarded by modern European and transatlantic physicians as a new and unusual malady, is now acknowledged to be one of our most common and most unwelcome visitors, and is admitted to have prevailed as a mortal disease, probably from all antiquity, and certainly from the earliest period of the recorded history of medicine.

Dr. Sanné, the author of the book now under review, has had no easy task to arrange in order the multifarious materials connected with the history, the pathology, the diagnosis, and the treatment of diphtheria; but he shews himself quite as competent in the literary composition of his work, as he is evidently skilful in the practical management of the malady of which it treats. Having been a pupil of Barthez and Trousseau, he has necessarily been thoroughly instructed in a subject on which those authors have written largely; and his own practical experience under their guidance, as well as in his own hospital and private practice, must have made him familiar with every aspect of the malady and with every method of its treatment. When he tells us, as he does in his preface, that his book, besides being founded upon pre-existing theses and memoirs, is the "quintessence" of about fifteen hundred recorded cases of diphtheria, it is at once evident that he has a right to consider himself a competent authority on that disease, and the perusal of his pages completely vindicates his claim to the attention of the medical profession throughout the world.

It might probably be objected to his treatment of the subject, that he has drawn his materials rather too exclusively from France, and that he has consequently shown too little regard for the facts observed and the views entertained in relation to diphtheria in other countries; but we are not inclined to find much fault with him in this respect. For, independently of the circumstances that France is, in a certain sense, the birth-place of diphtheria (the name having originated with Bretonneau), and that French authors have very carefully studied its features, it would really appear that the disease is more common in France than in other countries, and in Paris more than in other capitals; at least if reliance can be placed on the evidence of our present statistics. Hence, in discussing the literary history of diphtheria in modern times, authors of all countries unanimously draw their primary materials from French sources and take the views of Bretonneau as the starting-point for their disquisitions.

In the brief space at our disposal, it is quite impossible to do adequate justice to Dr. Sanné's elaborate treatise, and all we can hope to accomplish is to give some general idea of its contents, of the opinions which the author advances, and of the conclusions at which he has arrived.

In the first instance, then, an historical sketch is given of the progress of diphtheria, though under many other names, from the earliest period of recorded medical observation down to the commencement of the present century, when Bretonneau was confronted with what he at first regarded as a new and strange malady at Tours and its vicinity. From this epoch, and the publication of Bretonneau's Memoirs which appeared in successive years as new epidemics broke out and new facts were observed, the literature of diphtheria has enormously increased; and Dr. Sanné must have found it a gigantic task to search out the multitudinous papers scattered about in innumerable periodicals and other fugitive forms of medical literature in all parts of the civilised world. Still more difficult must it have been for him to re-

duce this heterogeneous and chaotic mass to order and arrangement, to separate the useful from the worthless, to reconcile conflicting views, and finally to present to the minds of readers of ordinary intelligence a consistent and complete picture of what must always be considered a mysterious, though, unhappily, too common malady. We think that Dr. Sanné has succeeded in this object, and those who will carefully read his work, long as it is, cannot fail to be impressed with the admirable arrangement of his facts, the extent of his practical knowledge, and the lucidity of his arguments.

It may, perhaps, be thought unnecessary to remark, although the statement is by no means so superfluous as it seems, that diphtheria is not a new disease. It is no more new than is typhoid fever, or Bright's disease, or bronchitis; like all these maladies, it has always been, and still is, among us; but, like them, it formerly passed under different names, and it does so even in the present day. Unlike the maladies we have named, however, it is exceptionally capricious and erratic in its visitations, appearing sometimes as a desolating scourge, and sweeping off hundreds of the population; at other times seemingly quiescent, or assuming only the sporadic form. Unlike these maladies, too, it chiefly, though by no means exclusively, attacks children, and these are the chief victims of its ravages.

What is, then, the essential character of this formidable malady? The answer is simple. It consists in the production of a false membrane on some of the tissues of the body; this characterises the disease and gives it its special feature. In the language of Dr. Sanné, all other changes, however important and interesting in various respects, are of secondary significance and are comparatively trifling. One or more of them may be wanting to the general picture, which may thus lose some of its accessories; but the principal object, nevertheless, stands forth with the same strength and clearness. This false membrane, it must be understood, is the expression of a general and septic disease, which even in its slightest forms affects the whole economy and produces lesions traceable in almost every organ. All the mucous membranes, and all the cutaneous surface, may become the seat of this false membrane, except those parts of the mucous membranes which are protected from the air, on which parts the diphtheric exudations are very rarely, if ever, seen.

The diphtheric false membrane, it must be further observed, has specific and peculiar characters, wherever it may be developed, and is by no means to be confounded with the ordinary products of inflammation or with the membranes peculiar to many other diseases of the mucous and cutaneous surfaces. In reference to the seats of the disease, Dr. Sanné divides his subject into the following sections, viz.: diphtheric angina, croup, pseudo-membranous bronchitis, diphtheric coryza, oculo-palpebral diphtheria, diphtheric otitis, buccal diphtheria, diphtheria of the anus and of the genital organs, and cutaneous diphtheria. Translated into the nosological language current in English medical literature, the meaning of this progressive morbid series is, that the throat is the chief and primary seat of the diphtheric manifestations, angina being a word in French specially indicating a throat-affection; that from this source the disease may spread to the larynx and trachea (croup), and to the bronchial tubes (pseudo-membranous bronchitis), and to the nose (diphtheric coryza); and that the other regions indicated may also become the seat of the diphtheric exudation,

and give rise to morbid conditions receiving special and corresponding appellations.

With respect to diphtheric angina, or the disease as observed on the tonsils, uvula, and soft palate, its existence is universally admitted and its pathological characters are well defined, although perhaps the word diphtheria is often made to do duty for many other affections; or, on the other hand, the diphtheric manifestations are so slight as sometimes to escape notice. When the disease is thus limited to the throat, it may pass away without causing any very serious symptoms, although the general constitution is always more or less affected; but when it extends to the larynx and trachea, or into the nose or into the bronchial tubes, the danger is imminent and life is seriously menaced. The disease, when affecting the larynx and trachea, is Croup.

It is, perhaps, almost needless to observe that in the language of all French writers, croup is thus synonymous with tracheal or laryngo-tracheal diphtheria, and Dr. Sanné shows, as we think satisfactorily, that the French authors are right in so regarding it. Home used the word "croup" to distinguish a disease which he observed and described, and Bretonneau distinctly states that *his* (tracheal) diphtheria is the croup of Home. But Dr. Sanné fully discusses this question in all its bearings, and he shows that in the great majority of cases, the pseudo-membranous affection of the larynx and trachea is clearly consecutive to that of the tonsils and soft palate, and must be therefore regarded as the same disease. The objection often urged against this view is, that the false membrane is sometimes primarily developed in the trachea, and that therefore it constitutes a different disease to that seen in the throat, but Dr. Sanné argues that in such cases the presence of false membranes in the throat is often overlooked for want of careful and repeated examination; and, moreover, he states that the false membranes are sometimes situated behind the tonsils, a fact he has ascertained by *post mortem* examinations. But besides all these arguments, it is really proved that croup or tracheal diphtheria sometimes appears at once in the trachea without any previous manifestation in other parts. Various French authors, as Vauthier, Bergeron, Trousseau, and many others, have estimated the relative frequency of the occurrence of this kind of tracheal diphtheria, or as they term it, *Croup d'emblée*; and Dr. Sanné considers that it exists in about one in every eight cases, the exact figures on which his estimate is founded being 142 to 1172 of the whole number.

Putting aside the cases of simple acute laryngitis, which is very often confounded with croup, and indeed is generally so called, Dr. Sanné carefully considers the question which has been very lately raised, or we might perhaps say revived, whether there are different kinds of croup, or, in other words, whether there exists a form of croup which is not diphtheritic; and he answers the question in the negative, adducing a multitude of facts and arguments which we regret our inability, from want of space, to reproduce. We may mention, however, that he regards the notion that an ordinary inflamed mucous membrane may produce a non-diphtheritic fibrinous exudation as wholly theoretical, and although it is true that certain chemical irritants may cause the production on the laryngeal mucous surface of pellicles resembling false membranes, he argues that it is not thereby proved that Nature spontaneously produces similar lesions independently of diphtheria.

The present review has already reached such a

length that we find it impossible to follow Dr. Sanné through the remaining parts of his most instructive work. On the important question of Treatment, his remarks are sound and judicious, he boasts of no discovery of any specific for diphtheria, which must be managed locally, constitutionally, and surgically, according to the indications respectively presented in each case. In the mild forms, moderate local applications, always accompanied by tonic medicines and dietetic support, will usually prove successful; but when the malady has reached the larynx or trachea, or both, there is very little hope for the patient except from the operation of tracheotomy. Other remedial means have occasionally been successful, as, for instance, ipecacuanha, and sometimes the false membrane has been expelled by the efforts of Nature; but, in the great majority of cases, tracheotomy affords the only chance of relief.

Even this remedy is a dangerous and a doubtful one,—not, indeed, from the perils of the operation itself, which, in other forms of throat-disease or obstruction is generally efficacious, but from the very nature of diphtheria, which, both by its poisonous action on the system and by the mechanical obstacle offered by the false membrane, exposes the patient to manifold risks often unavoidable under the most skilful treatment. We cannot conclude, however, without remarking that the statistics of this operation are far more favourable now than they were some years ago, and that, in our opinion, the patient, in desperate circumstances, ought always to be offered the chance of recovery which tracheotomy certainly presents. The whole subject of tracheotomy in all its bearings, is no less admirably treated by Dr. Sanné than are the other sections of his treatise.

R. H. SEMPLE, M.D.

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*The Germ-Theory applied to the Explanation of the Phenomena of Disease: the Specific Fevers.* By T. MACLAGAN, M.D.: London: Macmillan and Co., 1876.

The publication of this book is opportune. During the last few years references to the Germ Theory have been constantly met with in current medical literature, whilst a succinct account of what it implies has until now not been forthcoming. As a romance-writer in *Blackwood* could lately find no better foil to illustrate the prejudices of the typical Scotch army-surgeon of the old school than to make him speak disparagingly of the *Furum Theory*, we must assume that the idea is bearing fruit outside the profession. Professor Tyndall's lucid and interesting lectures are doing much to familiarise the term still more amongst the reading public. It is well, therefore, that just at this time all that can be said on one side of the question should be said, and there is, perhaps, no one better fitted to say it than Dr. MacLagan. If the germ-theory is required to explain anything in disease, it is in connection with the specific fevers that it should find its place. As they are generated by something from without, have a fixed period of incubation, and development, and "breed true", the idea of an organism, something that grows in obedience to fixed laws, naturally suggests itself to thoughtful minds as an explanation of their existence, and from its plausibility finds ready acceptance. Dr. MacLagan, having enjoyed unusual opportunities of studying the phenomena of fever, and having shown himself an experienced and accurate clinical observer, must therefore command



attention to his deliberate utterance on this important question.

The chief propositions which are brought forward in the book are, that contagia are living organisms, are, in the author's own words, parasites, and that the known conditions necessary for the development of these parasites account for all the phenomena of fever.

The assertion that the contagium is an organism, is supported by citing the observations of Beale, Chauveau, Sanderson, and Braidwood and Vacher, on vaccine lymph. It is inferred from these that the contagia of cow-pox and sheep-pox are solid and particulate. Analogies are drawn from the many recently recorded observations regarding the alleged presence of micrococci in diseased tissues, but it is not asserted that contagia are identical with these. The only thing, therefore, of the nature of an observed fact, which is adduced in evidence of the existence of an organism, is to be found in the testimony of the above-mentioned experimenters. The rest is matter of inference. An adverse critic might here remark that particulate organic matter, even granting its existence, is not synonymous with what is known as an organism; and exception may be legitimately taken to Dr. MacLagan's frequent application of the term protoplasm to the supposed invisible contagium.

To the objection which has been made that the microscope has not yet discovered the organisms of contagion, Dr. MacLagan replies that there is no good reason for supposing that, because we cannot see the germs, therefore, they do not exist. The microscopic argument against the germ-theory amounts, as he expresses it, to affirming that creative power cannot make, and endow with life, a particle of protoplasm less than one-fifty-thousandth of an inch in diameter.

Given the germ, does it account for all the phenomena of fever? Dr. MacLagan endeavours to show that it does. After a critical examination of the various theories of fever, in which he shows that they are more or less defective, he develops at length the view that the febrile state is directly produced by the development and reproduction of the parasite which specially belongs to each fever. The growing organism demands nitrogen and water. It takes them from the materials supplied by the blood, for the regeneration of the tissues, and hence begins a series of disorders of nutrition, which constitute the disease. The consumption of nitrogen by the growing germs accounts for the rapid wasting of the nitrogenous tissues, and their demand for water explains the thirst, and the disposition between the quantities of fluid absorbed and eliminated.

All the varied phenomena of fever are explained by the actions of these organisms in considerable detail, and often with much ingenuity. The reader is, indeed, apt to lose sight of the fact that Dr. MacLagan is describing only what may take place, and not what it is actually ascertained does take place.

The organism of each fever develops in a special part of the body, its nidus, and can develop in no other part. To the development an unknown something is necessary, a second factor, and when this is exhausted the disease ceases. It is the exhaustion of this second factor which exhausts the susceptibility to the disease, and individual insusceptibility is due to its absence. If we ask what this factor is, Dr. MacLagan replies, that there are many substances such as animal odours whose existence we recog-

nise, but which are alike beyond the reach of the microscopist and the chemist.

The objections urged by Dr. MacLagan to the physico-chemical theory of fever are often weighty and pertinent; and whatever may be thought about the germ-theory, it could not exist if any other theory were proven. Of the germ-theory, Dr. MacLagan alleges that "in consistent completeness, and in freedom from the uncertainties of conjecture and surmise, it surpasses any theory of fever hitherto advanced." Many readers will not follow him in accepting this statement. His explanation of the phenomena of fever by the parasitic germs is, even granting their existence, founded on a long series of hypotheses, which give, indeed, an explanation of the facts to be accounted for, but which are unsupported by direct observation, and which by no means exclude the possibility of many other hypotheses which an ingenious mind might devise. The skill with which these are developed to meet every emergency of the argument is indeed marvellous, but the substratum of fact which is necessary to produce conviction is wanting.

Still, no other theory has been proved, and the incubation and regular development of fevers must in the absence of proof to the contrary continue to foster the convictions of those who believe in the power of germs to produce specific disease. If Dr. MacLagan's suggestive book have the legitimate result of stimulating research, it will do good work. It brings before us in a simple and clear form what the facts are which must be accounted for, and shows the insufficiency of some theories, which have been very generally accepted.

The profession should be grateful to Dr. MacLagan for showing the actual position of the advocates of the germ-theory at the present time.

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*Mémoire sur la Galvanocaustique Thermique.* Par le docteur A. AMUSSAT fils. Paris: Germer Baillière, 1876.

This book, which is very elegantly got up and profusely illustrated, consists of an historical survey of the employment of the galvanic cautery in surgery, and of a series of cases in which the author has used this means. He employs chiefly the galvanic loop, seton, and bistoury; and the cases related, which have been generally successful, are such as fistulae, pedunculated tumours of the skin, and cancerous infiltration of the neck of the womb. Amongst the patients of the latter class, two who were operated upon five years ago, and who must have died unless surgery had stepped in to their relief, are still alive and well; of 7 others, 2 did not receive benefit, and 5 cases are still too recent to admit of giving an opinion on the result of the operation.

JULIUS ALTHAUS, M.D.

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## NEW INVENTIONS.

### A NEW STAGE INCUBATOR.

In the January number of the *Monthly Microscopical Journal*, Mr. Reeves, of the London Hospital, describes a modification of the Stricker-Sanderson hot stage, which promises to prove of great utility to embryologists. The central cell is ovoid and larger, and excavated only so far as to allow the admission of a pigeon's or a smaller egg. A free circulation of

hot water is established, and the space between the egg and the incubator is packed with cotton-wool, to retain the heat. The instrument is made by Mr. Hawkesley.

### THE LINTON CAB.

Messrs. Shanks, of Great Queen Street, have introduced to professional notice a new form of private carriage which claims favour on many substantial grounds. It is built like a hansom cab, except that it faces backward instead of forward, and the position of the shafts is precisely the reverse to that which they occupy in ordinary hansoms. It is curious to note how many advantages are thus gained. In the first place, the occupant of the cab is free from all draughts and gusts of wind, and even in severe weather can enjoy the open air as in the ordinary hansom, without suffering from the inclemency of the weather, either of the wind or rain. He can read his paper without having it blown out of his hand: he can smoke a cigar, and he can survey all passing objects at ease and leisure, since, in moving past them, he retains them for some time in view. The inconvenience to ladies, and even to gentlemen, of touching the wheel while getting in and out, is completely obviated, as the flaps of the door, being thrown back, protect the wheel, and shield the passenger from contact with it. It may be noticed, in riding in a railway train, how often seats with the back to the engine are preferred by experienced travellers; and this arrangement of carriage offers precisely the same advantages. The position, moreover, is one of perfect security, since the occupant of this carriage is so near the ground, and egress from it is so easy and unobstructed, that it is hardly possible that any accident can injure him. A great advantage of this carriage is its lightness of draught. The horse is as the coachman was, so near his work, that the carriage draws very easily; moreover, it balances itself perfectly; and what is still more important is that the sway, which with the long shafts of a hansom is so trying to a horse in turning corners and in moving otherwise from the straight line, is completely avoided. On the whole, we believe that this form of carriage will be found particularly suited to the work of medical men who require to be carried safely, expeditiously, and pleasantly, in a carriage of light draught, which affords them the benefit of the open air without the customary inconveniences of uncovered carriage or hansom cab.

### MEDICAL ELECTRICITY.

There are few subjects which are so ill understood by even experienced practitioners as the application of electricity to medical purposes. We have found that, even amongst the well informed practitioners, many hardly distinguish between a constant and a continued current, and there are comparatively few who would know in what cases they might expect successful results from employing such simple machines as Pulvermacher's chains, or the destructive working of a Leclanché. Another field of medical application of electricity is uninvestigated by even experts in medical practice, namely, the uses of electrical currents applied to baths. A good deal of testimony is available from Germany, and some from the experience of British practitioners, as to the valuable purposes to which the electric bath may be turned, especially in cases where any of the med-

icinal metals have accumulated in the system, and Schweig has lately published a monograph on the subject, of which a translation is being issued by Messrs. Putnam, of New York. We shall shortly give such an account of various medical apparatus for electricity now in use, and of the best means of applying them, as will clear up many difficulties concerning the subject.

### MILLIKIN'S PORTABLE EAR-SPECULUM.

Messrs. Millikin & Co. have placed before us a very simple and extremely ingenious modification of the bivalve ear-speculum. A little spring which gives it a tendency to open and dilate the external meatus, is placed in the edge of the speculum, and is self-acting. This little dilating ear-speculum is the most convenient we have seen, and will, we believe, be found very useful in practice.

### RECENT FRENCH BOOKS.

*Published by J. B. Baillière et fils.*

- La vérité sur les maladies de l'utérus et la physiologie médicale de la femme, par le Dr. Dechaux (de Montluçon), médecin de l'hôpital et des principales industries de Montluçon, etc., 1 vol., in-18 Jésus de 173 pages. Prix 3 fr. 50.
- La Gymnastique pulmonaire ou l'art de respirer dans tous les actes de la vie physique, par J. F. Bernard, professeur de chant. Quatrième édition. In-8 de 69 pages. Prix 3 fr.
- Lymphatiques utérins, et parallèle entre la lymphangite et la phlébite utérines (suite de couches), par Jacques Fioque, docteur en médecine de la Faculté de Paris. Paris, 1876. In-8 de 82 pages. Prix 2 fr. 50.
- Traité des maladies infectieuses. Maladies des marais, fièvre jaune, maladies typhoïdes, fièvre pétéchiale, ou typhus des armées, fièvre typhoïde, fièvre récurrente ou à rechutes, typhoïde bilieuse, peste, choléra, par W. Griesinger, traduit par le Dr. G. Lemaître. — Deuxième édition, revue, corrigée et annotée par le Dr. E. Vallin, professeur d'hygiène au Val-de-Grâce, Paris, 1877, 1 vol. in 8vo, XXXII, 742 pages. Prix 10 fr.
- Les signes certains de la mort mis à la portée de tout le monde, afin d'empêcher d'enlever les personnes vivantes, par le docteur Conneau. Limoges, 1876. In-8 de 72 pages. Prix 1 fr. 25.

### PARIS GRADUATION THESES

(22 to 29 January, 1877.)

- Pajet (Georges). Des paralysies du larynx, in-8 de 80 pages, chez V. A. Delahaye.
- Simyan (Julien). Contribution à l'étude de la syphilis laryngée tertiaire, in-8 de 44 pages.
- Guillemin (Michel). Etude sur l'épilepsie alcoolique, in-8 de 56 pages.
- Lespine (A.). De la Conservation et du pansement au diachylon des plaies graves des doigts, in-8 de 24 pages.
- Magnant (C.). Contribution à l'étude des kystes hydatiques du foie, diagnostic et traitement, in-8 de 124 pages, chez V. A. Delahaye et Cie.
- Cascua (Armand). Considérations thérapeutiques sur les sources de Salut à Bagnères-de-Bigorre, in-8 de 68 pages.
- Mouton (Alphonse-Marie). Du traitement des fractures par le pansement ouaté, in-8 de 50 pages.
- Gallopain (Clovis). Des hémorrhagies cérébrales intra-ventriculaires, in-8 de 40 pages.
- Tambureau (P.). De la pathogénie de la mort subite dans la fièvre typhoïde, in-8 de 48 pages.
- Lallemant (Octave). Quelques observations d'hystérie chez l'homme, in-8 de 44 pages.

### RECENT ITALIAN WORKS.

- Bergonzini, Dott. Curzio. Resoconto degli ammalati curati nella Clinica medica della R. Università di Modena nell'anno accademico 1875-76. Modena, 1876.
- Berruti, Dott. Giuseppe. L'endoscopio uterino (con figure). Torino, 1876.
- Borgiotti, Dott. Amerigo. Della statistica Comunale; considerazioni ec. Firenze, 1876.
- Cantani, Prof. Arnaldo. Manuale di materia medica basata specialmente sui recenti progressi della fisiologia e della clinica. Milano.
- Chirone, Dott. Vincenzo. La doppia attività muscolare e l'azione della chimina: critica e sperimenti. Risposta ai DD. A. Mosso e L. Pagliani. Bologna, 1876.
- Concato, Prof. Luigi. Trattamenti di medicina interna, stenografati e pubblicati per cura di Zamatto Giuseppe e Scaramella Girolamo. Padova, 1876.



De Dominicis, Dott. Nicola. Rivista igienica della città di Nola: Febbre da fagne. Napoli, 1876.  
 De Giovanni, Prof. Achille. Patologia del simpatico, un vol. gr. di circa 800 pagine. Milano, 1876.  
 Fiori, Dott. Gio. Maria. Un caso di sifilide cerebrale per riguardo alla diagnosi delle lesioni delle eminenze quadrigemelle. Milano, 1876.  
 Scaramella, Girolamo (Studente clinico). Lostudioso. Schizzoigienico. Padova, 1876.  
 —Le stazioni geologiche e i comizi agrari. Padova.  
 —La vaccinazione. Milano, 1876.  
 Turchini, Dott. Giuseppe. Sul valore dell'applicazione dell'elettroterapia nelle malattie oculari. Tema secondo. Firenze, 1876.

## MISCELLANY.

ACADEMY OF MEDICINE IN PARIS.—On January 16th, the prizes of the Academy of Medicine in Paris were awarded as follows: The Academy Prize of 1,000 francs to Dr. Pize, for his memoir on the Treatment of Aneurism by the different Methods of Compression; the Portal Prize of 2,000 francs to Dr. Hayem, for his Researches on the Pathological Anatomy of Muscular Atrophy. The Civrieux Prize (900 francs) was not awarded as an entirety, but was divided between Dr. Guipon (500 francs), Dr. Marvaud, and Dr. Willemin (200 francs each), for their memoirs on Insomnia. The Capuron Prize (3,000 francs) was awarded to Dr. Michel Peter, for his memoir on Pregnancy and Cardiac Disease. Of the Barbier Prize of 3,000 francs, 1,000 francs were awarded to Dr. Moncoq for his Apparatus for Instantaneous Transfusion of Blood. The Godard Prize of 1,000 francs was awarded to Dr. Charles Mauriac for his work on Psoriasis of the Tongue and the Buccal Mucous Membrane, with very honourable mention to Dr. Paul Olivier for his work on Osseous Tumours of the Nasal Fosse and Facial Sinuses; the Lefèvre Prize, (3,000 francs) to MM. Auguste Voisin and Burlureau, for their memoirs on Melancholia in its relations with General Paralysis. The Argenteuil prize (8,000 francs) was not awarded in its entirety, but 5,000 francs were awarded to Dr. Duplay for his work entitled Perineo-scrotal Hypo-spadias and its Surgical Treatment, 1,500 francs to Dr. Sayre of New York for his work on the Prostatic Vertebral Catheter, and 1,500 francs to M. Bénas of Paris for his Horsehair Filiform Bougies. The prize given by the Academy on the subject of Infant Mortality under one year of age was awarded to Dr. Bertillon; 300 francs and a silver medal were also awarded to Dr. Vacher of Paris for an essay on the same subject, and silver medals to Dr. Chrestien of Lille and M. Hérault of Grenoble. A large number of medals were also awarded to medical men who made reports on the various epidemics which prevailed in different parts of France in 1874, to the inspectors of the French spas, and to the public vaccinators for 1874. Medals of honour were also presented to nine of the most eminent members of the Society who had belonged to it for more than fifty years. The recipients were—MM. Bouillaud, Boutron, Bussy, Caventou, Chevallier, Cloquet, Hervez de Chégoin, de Kergaredec, and Piorry.

TRANSFUSION OF BLOOD.—The first practitioner of transfusion of blood for the purpose of "renewal of life" seems to have been Medea, who instructed the daughters of Pelias in the art.

Veteremque haurite cruorem  
 Ut repleam vacuas juvenili sanguine venas.

The modern practitioners who have revived the art are not less sanguine and full of promise, and some progress is being made towards improving the practice and defining its limits of usefulness. The Académie de Médecine, the Faculté de Médecine, and the Académie des Sciences have each in turn rewarded a young physician, M. Moncoq, for an improved apparatus which they declare to be "the best yet invented," a claim which M. Roussel would, we suppose, contest. M. Roger, in announcing the award, observes, however, with grave sarcasm, that without being too sceptical, one can but wish that the transfused patients would revive publicly and not die again secretly.

AN UNDOUBTED CENTENARIAN.—On Saturday, February 3rd, passed away Lady Smith, of Lowestoft, who, had she lived about three months longer, would have completed her 104th year. In a case so remarkable as that of Lady Smith, it is right to give the evidence of age in full. Here is an extract from the parish register:—"P. 393. Christenings in Lowestoft A.D. 1773. May 12, Pleasance, daughter of Robert and Pleasance Reeve. [Signed] John Arrow, Vicar". And in the family Bible is found the following entry made by the father: "11th May, 1773. The said Pleasance was delivered of a daughter about 1 in the afternoon, and [she] was baptised by the name of Pleasance". Many alleged examples of great old age have been disproved by showing that two sons or daughters have been baptised by the same name, and that the age of the younger has been counted as if he or she were the elder. Lady Smith had a sister of the same name; but that sister was born and died more than four years before her, and no daughter was born after her. Lady Smith was born two years before the outbreak of the American War, sixteen years before the fall of the Bastille. At the age of twenty-three she was married to Sir James Edward Smith, then a young physician of limited means, but who purchased on his own responsibility the collections and library of Linnæus, and became the founder and first President of the Linnæan Society. Sir James found in his young wife a helpmate who took the deepest interest in his pursuits, and their house at Norwich became the centre of literary and scientific society. He died in 1828, so that Lady Smith, after thirty-two years of wedlock, lived in widowhood for nearly half a century, for twenty-eight of which she lived in Lowestoft. She hardly knew what illness was till within the last two or three years, she had preserved almost all her teeth, and her eyesight was good enough to enable her to read reports of speeches in the *Times*. Her hearing remained almost unimpaired to the very end. To the time when her eyesight began to fail, her handwriting was of that clear and beautiful kind which in these days is seldom seen. In all that was passing she took the keenest interest; she delighted in conversing with friends of the highest mental qualities, such as Miss Sarah Taylor (afterwards Mrs. Austin), Professor Smyth, Professor Sedgwick, Dr. Whewell, and the present Dean of Westminster; and the frequent visits she received from such of those eminent men as were within her reach showed how much, they, too, delighted in her conversation. Her memory was most tenacious. To the last she continued to take interest in all the topics of the day. A letter is preserved, written in the first fervour of the French Revolution, in which she gives a lively account of the news transmitted daily to the Whig magnates assembled in Mr. Coke's great house; and it is but the other day that, unable any longer to read for herself, she was eagerly listening to the speeches and articles about the "Eastern Question". Almost the last things she heard with her old freshness and interest were the Dean of Westminster's address to the children on Innocents' Day, and the account given in the *Times* of January 26th of the unveiling of Burns' statue. Those who knew, need not be reminded of the memory, the intelligence, the sympathy with all that was beautiful in poetry and in nature, the graceful courtesy of manner, the openness of heart, the freedom from prejudice and narrowness of mind, the expansive benevolence and the true Christian charity, which all remained unblighted by the snows of more than a century of years. The *East Anglia Daily Times* says Lady Smith, upon the occasion of attaining the centenary anniversary of her birth, gave a dinner to all the aged poor in the neighbourhood, and on the same occasion received from the Queen a copy of *Our Life in the Highlands*, with the following inscription in Her Majesty's own writing:—"From Victoria R. to her friend, Lady Smith, on her birthday."

SCIENCE AMONGST THE SIOUX.—In the last Session of the Berlin *Anthropologische Gesellschaft*, Professor Virchow stated that the intrepid young traveller, Herr v. Horn von der Horck, was in the camps of the Sioux Indians, busily engaged in obtaining plaster casts for craniological studies.

**FEMALE MEDICAL EDUCATION IN INDIA.**—At Bareilly, in the North-Western Provinces, the girls of a school have been instructed in medicine and simple surgery, so as to be able, with a matron and a native doctor, to carry on successfully a female dispensary, which has been well attended, and is much valued. At Benares, Brahmin widows, who have become well educated in the Vizianagram Schools, where none but female teachers are employed, are going through a regular medical training, and the aptitude they manifest leads to the hope that they may become good practitioners. At Bombay, a midwifery class of women has been connected with the Medical Hospital; a number have already been sent out, and have proved very successful.

**LEECHES.**—One of the oldest American leech-dealers has been interviewed by the correspondent of a contemporary. His opinions are as follows. "The American leech I believe to be utterly valueless. I have received fine-looking specimens from Mississippi and Pennsylvania, but I found them wholly worthless. They are far inferior to even some European varieties of the *hirudo decora*, which cannot easily be induced to bite unless blood be drawn to excite them. I consider six Swedish leeches equal to at least one hundred of any American variety. Those exported to America are generally full of blood, and at Rhode Island there are immense purging-ponds in which the newly arrived leeches are placed, and left to digest the last meal. Until it has been perfectly digested they are useless. These ponds belong to Mr. Witte, who does nearly all the importing for American leech-doctors, and he charges an extra price for the ponded leech, because the leeches must remain at least a year in the purging-pond. It takes a year for them to get rid of one good meal. The leech can live on almost nothing; its vitality is absolutely prodigious. But it is a curious thing that they are constitutionally delicate creatures. If deprived for a considerable time of clay or turf to burrow in, they are liable to disease. They are carried off by epidemics peculiar to leech life, some of which appear to be skin-diseases. I have to nurse them pretty carefully, and when I find one leech sick I put him in the leech-hospital. A milk diet frequently restores sick leeches to perfect health."

**VEGETABLE DIGESTION.**—Professor E. Morren of Liège, in a communication to the Royal Academy of Belgium, fully examines all the evidences bearing upon vegetable digestion, of which, it may be observed, he is an ardent supporter. He treats more particularly of the rôle of ferments in the nutrition of plants. It is indubitably proved, he states, that certain plants have the power of attracting, retaining, killing, dissolving, and absorbing insects, and even higher animals. Moreover, digestion is not exclusively confined to carnivorous plants, but it is common to them all, and appears to be the necessary condition to assimilation. He endeavours to show that the presence of the same organic products in plants and animals is easily explained when we recognise the fact that nutrition is similar in the two kingdoms. Formic acid, for instance, is found in ants, and in the hairs of the sting-nettle; butyric acid in sweat and in the pulp of tamarinds; palmitic acid in animal fats and in palm-sugar; oxalic acid in the renal secretion, and in almost all plants. The protoplasm again offers the same essential characters in plants and animals, suffers the same reactions, the same movements, and the same contractility. Basing his argument upon these and other data, Professor Morren finds nothing remarkable in a similarity of functions; and the facts that have been brought to light concerning "carnivorous plants" may be regarded, apart from the peculiar structure of the plants, as particular cases in a general rule.

**CRANIOLOGY AND RESPONSIBILITY.**—Quite a little sensation appears to have been created in Vienna by a paper read before the Verein der Aerzte Niederösterreichs by Professor Benedict, the object of which, as stated, was to show that in general nobody can be completely responsible for any good or bad action. The paper was a further development of the position he took at the last Congress of Naturalists at Gratz. After extensive personal investigation, Benedict

says that the skulls of fifty per cent. of thieves present a high degree of asymmetry. In twelve brains examined, nine of murderers, two of habitual thieves, and one of a falsifier, the surface of each exhibited signs of abnormal development. Of those conditions principally observed in these and similar cases, Benedict says the most important is the frequency with which the cerebellum is incompletely covered by the occipital cerebral lobes. His conclusion is that, persistent criminals being incorrigible by a physical necessity of their organisation, the good of society requires that, instead of a short punishment, permanent restraint should be more generally substituted in the case of such offenders.

**PROFESSOR HUXLEY ON BIOLOGY.**—In the course of a lecture delivered in the theatre of South Kensington Museum by Professor Huxley, on the subject of Biology, he showed what biology is, why it should be studied, and how and when it should be studied. Biology, he explained, was a science which covered all the phenomena of living things as distinguished from those not living, and therefore related to animals and plants. Most people laid great stress and right stress upon the conception they entertained of the position of man in this universe, and his relation to the rest of Nature. Most people held that man occupied an isolated and peculiar position in Nature—that he is in the world but not of the world, and that his relations with things about him are of a remote character; that his origin is recent, his career is likely to be short, and that he is the great central figure around which the rest of things in this world, like a set of marionettes, gyrate. Biologists turned to the physical organisation of man; they examined his whole structure, his bone framework and its clothing. They resolved him into the finest particles which the microscope would enable them to break up; they considered his various functions and activities; they looked at the manner in which he was concerned on the surface of the world, and then they turned to the animal world, and taking the first handy animal—say a dog—they professed to be able to demonstrate that the analysis of a dog leads to the same results in gross as the analysis of a man. They find almost identically the same bones, having the same relation to each other. They can trace the nerves of a dog and the nerves of a man, and they find that the regions of sense are found in man and are found in the dog. They analyse the brain and the spinal chord, and they find that what does for the one does for the other. Moreover, they trace back the dog and the man, and find that at a certain stage the two creatures are not distinguishable the one from the other. They find the dog has a distribution over the surface of the world comparable to that of the human species; and what is true of the dog they find to be true of all the higher mammals, and that for the whole of these creatures they can lay down a plan comprising all in one great fundamental unity. Investigations of this kind proceeded step by step, and gradation by gradation, from man at the summit to a certain animated jelly at the bottom of the scale, so that the idea of Liebnitz that animals formed a graduated scale, although not exactly in the form he propounded, turned out to be essentially correct. More than that, if the investigation were pursued in the vegetable kingdom, you went from the gigantic oak until you came down to a speck of animated jelly which it was difficult to distinguish from the lowest animal. Biologists had arrived at the conclusion that there was unity of animal and vegetable action, and that all varieties were but gradations of the same great plan. It was admitted that a great gulf separated man from the lower animals; but the difference was a difference of degree, not of kind. Amongst animals were found various faculties, especially mimicry. There were architects among them, so that the architects could not claim exemption. But there was no sculpturing animal, no modelling animal, and no drawing animal. He mentioned this so that such comfort might be derived from it as artists might like to draw. If what biology told were true, it would be necessary to get rid of "man and his place in Nature", and to substitute his real place, and such substitution was only possible by man



putting himself in a position in which he would be able to some extent to appreciate the nature of the arguments which biologists had to offer. On this point Professor Huxley ridiculed his critics, who he maintained had not even mastered the alphabet of the subject. He then drew attention to the possible use of biology in relation to ascertaining the true nature of the germs of infectious disease; he pointed to the revolution in agriculture during the last forty years, due largely to the theories of Liebig, and to the precise definition of certain processes which go on in plants, and which are part of the subjects of biology. Granting the use of studying biology, Mr. Huxley argued that mere reading was of little value without actual observation and experiment. Although there were about 100,000 species of insects, yet anybody who knew the structure of a properly-chosen insect would have a fair conception of the structure of the whole. In fact, there were such things as types of form in animals and vegetables, and for the purpose of getting precise knowledge of what constitutes the leading forms of animal and plant life, it was not needful to actually examine more than a comparatively small number of specimens. In his own laboratory, the students were shown the structure of water weeds, ferns, the common polyp, earthworms, snails, lobsters, cray-fish, black beetles, common skate, cod-fish, tortoise, and pigeon or rabbit. With regard to museums as at present arranged, Professor Huxley drew a humorous picture of the visitor trudging through a quarter of a mile of animals more or less well stuffed, and with all their names written out underneath them; and, unless the experience of others was different from his own, the upshot of it was that they left the splendid pile with sore feet, a headache, and a general impression that the animal kingdom was a mighty maze without a plan. For the use of scientific students, he would have the skins and skeletons of animals, and for the general public, a few specimens of the more distinctive animals, and a brief statement of their nature and mode of life. On the fourth point, when biology should be studied, he saw no valid reason why it should not be part of an ordinary school training, illustrations to be given in the first instance from plants, to be followed at a later stage, and among older pupils, with the commoner animals. Especially was the study commended to those who intended to follow the profession of medicine.

**SNAKE-STONES.**—The mystery of legendary tradition has for ages gathered round the "Snake stones" of India, Ceylon, and Mexico. Sir Joseph Fayrer has, however, shown that they are totally useless as antidotal applications, and that the snake charmers rely solely on their address and on their facilities for destroying the poison glands of the snakes. In the last number of the *Indian Medical Gazette*, Surgeon-Major Beatson gives a full account of their mode of preparation by the priests, from one of whom he was able to obtain specimens and full directions, which shows them to be nothing more than pieces of calcined horn, treated with acetic acid, and rendered absorbent so that they will adhere to a wound.

**A MATERIALISING MEDIUM.**—Dr. F. H. Gerrish and Wm. W. Greene, of Portland, Maine, have recently exposed a medium fraud which had flourished in their city. One gentleman secured the medium by holding her hand, while the other pushed aside a screen, and discovered the apparel of the lady in a heap at the foot of the stool, and pinned to the floor. Her trick was shown to consist in wearing undergarments with which she could emerge from her external apparel with ease, and, to all outside appearance, without any disturbance.

**CALIFORNIAN DOGS.**—A California paper states that a San Francisco firm buys, at forty cents each, all the dogs which die or are killed in that city. At their manufactory the skins of the dogs are removed and sold to the tanneries; the hair is taken off and sold to the plasterers; the hide is tanned, made into gloves, and sold in the market. The denuded carcass is thrown into a huge cauldron, and boiled until the bones are easily separated from the flesh, when they are removed and sold to the sugar-refineries, where

they are ground to a fine powder and used to clarify sugar. The oil that rises to the surface of the boiling mass is skimmed off and made into "cod-liver oil", and the remainder is used for fattening hogs.

**A SMOKER'S DISEASE.**—M. Mauriac, Surgeon of the Hôpital du Midi, has just added another to the special diseases of smokers. He has described, under the title of *plaque des fumeurs*, a morbid change of the mucous membrane of the tongue and mouth, a special psoriasis. This lesion may degenerate into epithelioma; and, according to M. Mauriac, cancer of the lips and tongue has often no other origin than this. Both are common among men, and very rare, as might be supposed, among women.

**INSANITY IN AMERICA.**—It appears to be proved by the census returns that insanity does not increase in proportion to the growth of population in the United States for the past twenty years. In 1850, that country had a population of 23,191,876, and a total number of insane and idiots of 31,397, or 1 in 378. In 1860, with a population of 31,443,322, there were 42,864 insane and idiots, or 1 in 733. And in 1870, with a population of 38,555,983, there were 61,909 of that class, or 1 in 623. In England, during the same period, there was an average of about 1 in 450; in Scotland, 1 in 460; in Ireland, 1 in 400; in France, 1 in 690; and in Australia, 1 in 524.

**SWEARING TO HIS OWN IDIOCY.**—At a recent will trial in Toledo (Ohio) the defendant swore that at the time he executed the instrument he was "idiotic and of weak and unsound mind". This is the first case on record in which this very common explanation concerning one's idiocy was ever sworn to. Generally, however, this is not necessary.

**SMILER'S PATENT HEALTH-LIFT.**—The *Scientific American* gives the following history of this invention. Dr. Smiler, says Max Adeler, had a large tank placed on the top of his house, from which to supply his bath-room, and so forth, with water. The water had to be pumped up about fifty feet from the cistern in the yard, and the doctor found it to be a pretty good-sized job, which would cause him constant expense. So, after thinking the matter over very carefully, one day an idea struck him. He built a room over the cistern, and put the word "Sanitarium" over the door. Then he concealed the pump machinery beneath the floor, and he rigged up a kind of complicated apparatus with handles and hinges and a crank, so that a man, by standing in the middle of the machine and pulling the handle up and down, would operate that pump. Then the doctor got out circulars and published advertisements about "Smiler's Patent Health-Lift", and he secured testimonials from a thousand or so people, who agreed that the health-lift was the only hope for the physical salvation of the human race. Pretty soon people began to see about it, and Smiler would rush them out to the "Sanitarium" and set them to jerking the handles. And when a customer had pumped up fifty gallons or so, Smiler would charge him a quarter, and tell him that three months of that kind of thing would give him muscles like a prizefighter. The thing became so popular that he had to enlarge his tank and put in a smaller pump; and he not only got all his pumping done for nothing, but the people who did it paid him about 1,500 dollars a year for the privilege. One day, however, Mr. Maginnis, who had been practising at the health-lift every day for months, broke the board upon which he was standing, and plunged into the cistern, and, just as he was sinking for the third time, Smiler fished him out with a crooked nail at the end of a clothes-prop. A few days later, Maginnis came round with a lot of other patients and cross-examined Smiler's servant-girl, and learned about the truth, and then they went home mad. A consultation was held, at which they resolved to prosecute Smiler for damages, and for obtaining money under false pretences. It is thought by good judges that, by the time the court get through with Smiler, it will be about the unhealthiest lift for him he was ever interested in.

# The London Medical Record.

## THE ACTION OF WATER UPON THE HEALTHY AND DISEASED SKIN.

BY PROFESSOR HEBRA, VIENNA.\*

"Gutta cavat lapidem, non vi sed sæpe cadendo."

BOTH in scientific writings, and in the mouth of medical men and laymen alike, we read and hear opinions on the action of water which are often in little accord with the principles of science, or with the results of experience.

In order to avoid misunderstanding, I must begin by insisting that it is only of the good and evil effects of water upon the *skin* that I speak. I wish to lay my experience in this matter before the profession, without any intention of criticising or lauding the effects of hydrotherapy, in general.

To begin with the action of water upon the healthy skin: it is almost universally believed that the frequent use of vapour and shower baths, frequent bathing in warm or cold water, frequent washing and scrubbing, are healthful operations which can never do any harm.

Against this opinion I must enter my decided protest. On the one hand, we know that there are millions of human beings who have never bathed in warm or cold water all their lives long, who at the utmost give their hands and face a superficial rinse once a week, and nevertheless enjoy up to old age a state of health which may well be envied.

On the other hand, no one can prove by statistics that the frequent use of the various kinds of baths protects people from sickness, or that washing in cold water strengthens the body against catarrh and rheumatism and "catching cold".

A comparison of the frequency of diseases in towns, where bathing and washing are more common, with that observed in the country, where often no bath can be had, even in cases of necessity, does not speak for the value of these manipulations as protective measures. I do not mean to say that the greater proportion of sickness and mortality in great towns depends upon frequent washing and bathing; but I cannot admit the contrary opinion, that repeated baths, and particularly washing the whole body in cold water, give any protection against disease. So long as these ablutions are accompanied by a feeling of comfort, and are not followed by any eruptions on the skin, they may no doubt be allowed as a pastime, an amusement, an aquatic sport; but whenever the skin thus repeatedly irritated begins to react, as soon as itching, more or less severe, follows, as soon as persistent redness (erythema) or wheals (urticaria), or pimples and vesicles (eczema) make their appearance, it is high time to leave off bathing and washing, if we do not wish to produce diseases of the skin, which often take months and years before they disappear, and give the patient unspeakable misery.

It is important to consider, in the first place, the quality of the water, and the way in which it is used. Simple baths, whether warm or cold, in river or rain

water, do not irritate the skin nearly as much as when combined with shampooing and wet packing and shower-baths, or when a vapour-bath is made more efficient by friction and by the various manipulations of the Turkish or Russian bath. The results of such attacks upon the skin are seldom long to wait for. Sooner or later a continual redness appears, followed by burning or itching; then come pimples, boils, and pustules; and though in past times these eruptions were regarded as critical and beneficial, we must now look on them in their true light as simply the injurious results of the action of water.

Those of us who work in large hospitals see every day patients of the labouring classes, with eczema of the hands and arms which depends entirely upon this cause—kitchen-maids, laundresses, waiters, housemaids, servants at baths, nurses, and others. To the same cause are due the eruptions well known in watering places as *Psydracia thermalis*, which are not confined to those who use sulphurous and mud baths, but are also found in visitors to the unmedicated springs of Gastein and Wildbad.

Lastly, I will mention the fact that, when wet binders are frequently applied, without being properly dried, mangled, and ironed, the affection almost always follows which I have described as *eczema marginatum*, now ascertained to depend on the presence of a fungus. Those who have seen this malady know its obstinacy, its rapid extension, and the intolerable itching it occasions. Whether the supposed benefit derived from this means of treatment makes up to the patient for his eczema marginatum, I must leave each to judge for himself.

Now if the continued action of water upon the apparently healthy skin of a person in good health leads to such unpleasant results, how much more frequent and severe will be the irritation when the water is applied to a surface already diseased. Not only evident disease, in the ordinary sense of the term, but injury by any repeated pressure or irritant, renders the skin more liable to suffer from a new cause of mischief. Wherever the skin has been irritated by the pressure of clothing or bandages, or by blisters or mustard poultices, the primary redness is followed by deposit of pigment; and when the skin is afterwards attacked by scabies, variola, or other eruptions, they are more abundant on these regions than elsewhere.

In the same way the hydropathic treatment with warm or cold water, binders, douches, packings, and repeated washings, do not make the patient more healthy, do not protect him from disease, but produce in the skin a *pars minoris resistentiæ*, and render it much more susceptible.

How far, by these manipulations, the diseases of other organs are benefited I will not discuss at present. My only object is to prove that the irritation which water produces either makes the skin diseased at once, or increases its liability to become the seat of future maladies.

To the question, How does water irritate the skin? the answer has often been given, that its temperature determines the irritation, and that it is therefore very important whether cold or warm water be used. Of course we are not here considering the effect of water at the freezing or the boiling point; but, to be more exact, we will speak of it between 5° and 40° cent. (9° and 104° Fahr.) Within these limits I believe that temperature makes very little difference. Everyone must be aware how quickly rags or lint dipped in cold water become warm

\* Wiener Medizinische Wochenschrift, January 6 and 13, 1877.



when applied to the skin, and how quickly those dipped in warm water become cool; that is, in each case they conform to the temperature of the skin at the time, unless they be renewed again and again. Cold compresses act in precisely the same way as warm upon an inflamed skin. If erysipelas, or boils, or carbuncles, or any other inflammation be treated with hot or cold applications, even with hot poultices or bladders of ice, the course of the disease remains the same; it is neither hindered by cold, nor hastened by warmth. The controversy, Which method of treatment is the best? will never be decided, because each observer depends on his own experience, which generally applies only to one or the other method, while he regards the opposite as dangerous—"und darum perhorresziert." But I have often made experiments with both plans of treatment. I have treated boils and carbuncles with ice-bladders at 19° cent. (66.2 Fahr.), and with poultices at 50° cent. (140 Fahr.), with precisely the same results; so that at present I am entirely guided by the feelings of the patient in the matter. One is fond of warmth, while another cannot bear it, and is sure that he will be relieved by a cold application. We must therefore accede to the wishes of our patients, with the conviction that in neither case will any harm be done.

What I have said of water-dressings applies equally to hydropathic packing. Whether the sheet be dipped in cold or in warm water, the amount of irritation of the skin depends on the time of the application, and on the degree of sweating it produces; and when there is much sweating, sudamina follow.

If we examine the skin after a warm or cold bath, we find it equally red (hyperæmic) in both cases, and it is only the feeling of heat or cold which varies according to the temperature of the air. Hence comes the belief that a cold is easily caught after a warm bath, because the air feels unpleasantly cool, while after a cold bath the warmer atmosphere is agreeable. But we all know how quickly the temperature becomes equalised, for neither the feeling of cold which follows a warm bath, nor the genial warmth after a cold bath, lasts long.

We must, therefore, seek the irritant effects of water not in its temperature, but in other properties.

In the first place, it softens and macerates the skin, and thus destroys the superficial dead layers of epidermis, and lays bare the deeper and younger cells.

Everyone knows that, when he dries and rubs the skin after a hot or cold bath, a number of minute particles come off, which are nothing but the softened epidermis, with any impurities it may hold. It is to the same cause that the more or less marked opacity of the water in the bath is due.

When water is allowed to act for a longer time in bathing or washing, the skin, beginning with the tips of the fingers or toes, becomes white and wrinkled. But the Malpighian layer is never exposed, even if the skin be macerated in water for months. The secondary effect which follows is irritation. Numerous red points appear, at first apart, then clustered closer together, until they form red surfaces, which exactly correspond to the part of the skin which is kept under water.

Applying these facts to practical therapeutics, we find that water is contraindicated, whether by washing, water-dressing, packing, or baths, in the case of sensitive and irritable persons whose skin

is apt to become red, itching, or covered with eruptions: also, whenever the skin is in a state of acute oedema and infiltration: and, thirdly, when the superficial layers of epidermis are already destroyed by the disease or the remedies, and the deeper ones exposed. For instance, wet compresses and baths are not advisable when soaps of any kind have long been used, or ointments containing sulphur, mercury, iodine, or arsenic. It is much better to use starch or some other indifferent powder.

On the other hand, water is indicated in the treatment of diseases which require this macerating and irritating effect. Thus we use it in all chronic affections of the skin in which we wish to remove accumulations of cuticle, or to bring our remedies into direct contact with the corium, as in psoriasis, lichen, ichthyosis, and pityriasis rubra; or when we wish, at the same time, to soften dry hypertrophied epidermis, and irritate a thickened subjacent cutis, as in long-standing eczema and prurigo. Water, again, is useful in removing secretions, inflammatory products, and dead tissue, which are hurtful, as in the case of freely suppurating wounds, ulcers, and gangrene of the skin; and, lastly, in order to prevent access of air and favour skinning over of wounds, as in pemphigus and extensive destruction of the skin by burns or by corrosives.

In conclusion, I will say a word on the duration to which it is well to limit baths. Here, again, we must depend upon experience. We see washerwomen, bath-servants, sailors, fishermen, and others, exposed, sometimes for the greater part of the day, to the action of water; and yet they are none the worse. When patients tell us that they fall ill if they get their feet wet, or are caught in the rain, we must not regard this as always more than the application of the well-known rule, *post hoc, ergo propter hoc*.

The common supposition that custom protects persons from such effects is difficult to prove. Our Arctic Expedition (see the account of the Austro-Hungarian North Polar Expedition, in 1870-72, by Lieut. Payer), and many instances of shipwreck, show that, custom apart, the prolonged contact of water need not produce its supposed results. Captain Webb's swim across the channel has proved that hours, and even days, may be spent in the water without harm.

The rule for the duration of a cold bath must depend on the feelings of the individual, and on the actual effect produced upon his skin. Theories grounded on the actual physical withdrawal of heat from the body by cold air or cold water are refuted not only by the experience of travellers, but also by careful observations at the bedside. I will only say, in passing, that the mortality in enteric fever, and in scarlatina, is not lower when the patients are bathed in cold water, or wrapped in wet sheets, than when the treatment is purely expectant.

The proper time to stay in a warm bath has also been recently discussed. There are physicians who will not allow more than ten minutes, and stand anxiously over the patient, watch in hand, lest the period should be exceeded. How far this may be in the interest of the patient, or what is the use of these short baths, I do not know. But the facts that a patient often feels comfortable while in the bath and soon afterwards, but in a few hours begins to suffer from tension of the skin, itching, and smarting, and that at many watering places, as at Leuk, the patients are prescribed several hours in the warm bath, have led me to make experiments in order to answer the

question how long a man may stay in a warm bath without injury to health.

I began with two hours; increased these to twenty-four; then advanced to days, and at last extended the duration of the warm bath to from 1 to 9 months. I found that people can eat, drink, and sleep just as well in a continuous warm bath as out of it; that nutrition, respiration, and excretion go on as before; that they are not troubled with skin-diseases which are painful and obstinate out of water, and that affections are thus cured which have resisted the most persevering and varied treatment. These experiments, which I have carried on since the year 1862, have also proved that baths may be employed continuously in cases in which they were supposed to be most dangerous, during menstruation, in the case of epileptics, and in spite of an access of pleuro-pneumonia.

If I am asked how I came to adopt such an apparently dangerous remedy, I answer that I began it in the treatment of extensive burns, in order to relieve the terrible suffering or the profuse suppuration which they occasion.

A detailed report, by another hand, of all the cases which I have treated by the continuous bath during the last fifteen years will shortly appear, and will leave no doubt that of this mode of treatment we may say, "*Multis profuisse et nemini nocuisse.*"

I will now sum up what I have said.

1. Water is not an indifferent application to the skin, but exerts a considerable irritant action on it, which may either produce morbid states, or modify those already present.

2. It is not the temperature of the water, but its macerating and irritating properties, which are the efficient part of the application.

3. In prescribing water-dressing, baths, &c., the feelings of the patient should be followed with respect to temperature.

4. Washing the body all over, and bathing (whether in cold or warm water) are of no use as preservatives against affections of the internal organs, but often produce diseases of the skin.

5. When baths are to be used with benefit in the treatment of cutaneous diseases, they must always last a considerable time, an hour or more; and in cases which demand them, warm baths may be continued uninterruptedly night and day for months.

P. H. PYE-SMITH, M.D.

## BROWN-SÉQUARD ON ANÆSTHESIA IN CEREBRAL DISEASE.

In the *Dublin Journal of Medical Science* (Jan. 1877) appears a lecture on anæsthesia as an effect of brain disease, delivered before the King's and Queen's College of Physicians in that city by Dr. Brown-Séquard, on the 23rd of last November.

The lecturer began by restating the opinion brought before the College of Physicians in London last summer, "that the fibres of the anterior pyramids are really the means of communication between the brain as the organ of the will and the muscles, is a point in flagrant opposition to facts." [The metaphors here are confused, but the meaning is sufficiently clear.] "It is even a question whether these fibres have any share at all in the conveyance of orders of the will to the muscles." "As regards the discoveries made by Fritsch and Hitzig," he continues, "I have to show

that these facts, although many of them are perfectly correct, have not the very least weight in the matter; because we can find an immense number of facts which would prove exactly the reverse of what is apparently proved by the series of facts favourable to the views of the localisers."

Dr. Brown-Séquard next refers to Flourens's famous experiment of removing the *corpus vitalis*, and argues that, since this point at the "nib" of the calamus can be removed without causing death, and since similar effects can be produced by merely puncturing the restiform body adjacent, the experiment is one of irritation, and not of direct removal of a centre.

Paralysis, anæsthesia, aphasia, amaurosis, may appear or be absent, whether the lesion be in one or both frontal lobes, or the corpora striata, or the thalami, or the crura cerebri. "All that at present we know as regards localisation of function is, that functions are not localised in clusters of cells existing in a zone in certain limited portions of the brain, but belong to cells which are scattered in the whole brain and other parts of the nervous centres." The supposed centres of sensation, of vision, and of speech can be destroyed without anæsthesia, amaurosis, or aphasia occurring; and these symptoms may be produced by a lesion anywhere in the brain, or even in the intestines, kidneys, or bladder.

Mere puncture of the rhomboid ventricle in a bird will produce all the symptoms of locomotor ataxia: mere puncture of one posterior column in a cat will produce loss of movement in the legs on the same side, with vaso-motor paralysis, raised temperature, and hyperæsthesia, and on the opposite side anæsthesia. The connection of the cord with the brain by the anterior pyramids is not to conduct motor or sensory impulses, but to produce changes of nutrition in the ganglion-cells of the cord, and in the nerves. The trophic changes thus produced by cerebral lesions were ascertained by Türck, confirmed by Charcot and Bouchard, and are in harmony with Vulpian's later observations.

The writer then formally recants his well-known proposition on the effects of lateral and cross sections of the cord. Like the facts on which Broca and Charcot have founded their theories of localisation, he still accepts the results of his previous experiments, but explains them differently. The paralysis on the side of injury of the cord must, he now considers, be explained as the effect of irritation, starting from the injured spot, and stopping the activity of the cells below it.

Even the effects which result when blood is cut off from the brain by ligation of its four arteries, he believes are not due to withholding food and oxygen from the cerebral cells, but to some irritation analogous to that which stops the function of the cardiac ganglia when the vagus is galvanised.

Cases of disease in one side of the brain or bulb, producing paralysis on the same side, are cited from Stanley, Waters, and other writers; disease in both corpora striata producing unilateral anæsthesia, from Abercrombie; in one of the thalami, producing general anæsthesia, from Auguste Ollivier; in one half the cerebellum, producing anæsthesia on the same side, from Mr. Woodhouse; and of a similar lesion producing loss of motion and sensation on the same side, from Dr. Tailhé. Anæsthesia, again, has been seen to result from lesion of supposed motor centres, or of the surface of a convulsion. Lastly, even when disease of one side of the brain is



followed by palsy of the other, there may be no anæsthesia at all, or it may appear in one arm or leg only.

P. H. PYE-SMITH, M.D.

[To be continued.]

## FURTHER CONTRIBUTION TO THE PATHOLOGY OF MORPHIOMANIA AND ACUTE POISONING BY MORPHIA.

By DR. LEVINSTON, Principal Physician of the Schöneberg Asylum, Berlin.\*

LAST year I had the honour to communicate to you my observations on morphiomania. On that occasion I called attention to two facts: one, the property of the urine in cases of chronic poisoning by morphia to turn the plane of polarisation to the left, was already known; the other, the occurrence of diabetes in acute poisoning by morphia, was new.

Through further researches, I have learned to recognise a morbid condition which penetrates into the animal economy more deeply than any of the hitherto known disturbances; namely, the excretion of albumen. All the phenomena of morphiomania as yet described have this in common, that they quickly disappear as soon as the poison is eliminated from the body, while the production of albumen can be observed for months after the commencement of abstinence from the use of the drug.

It is not all morphia patients, however, that excrete albumen; nor are all affected with delirium tremens and other symptoms of morphinism. But the excretion of albumen is sufficiently frequent, and I have observed it especially in patients who had injected large quantities of morphia during several years. The amount of albumen excreted appears to be in proportion to the duration of the use of morphia and the size of the doses, and varies from slight cloudiness to flocculent deposit.

Before cases of the latter kind came under my observation, I regarded slight cloudiness as the result of accidental mixture arising from slight catarrhal affections of the genito-urinary system; but the deposits left no room for doubt that pathological changes were going on in the uropoietic system.

On chemical examination of the urine in these circumstances, its behaviour with nitric acid in some cases was remarkable, and reminded me of Bence Jones's acid-albuminate. When urine to which nitric acid had been added in abundance was heated, no precipitate fell until the urine cooled; and it was re-dissolved on again heating the urine. All other reagents, such as carbolic acid, ferrocyanide of potassium, acetic acid, acetate and sulphate of soda, without exception, promptly gave indications of albumen.

After evidence had been furnished that the subjects of morphiomania had albuminuria, the question remained to be decided, whether the albumen was really the result of the injection of morphia. The reply must be in the affirmative, since the patients under consideration were admitted into the institution without any evident disturbance sufficient to cause the production of albumen: they presented only the recognised symptoms of morphia-poisoning, and subsequently of abstinence; and, what spoke convincingly in support of the connection, they gra-

dually lost the albumen while the morphia was withdrawn from them.

In order, however, to remove all doubt, I made some experiments on animals, with the details of which I will not trouble you. The results were the following. Three dogs and twelve rabbits were poisoned with morphia. The general symptoms produced thereby were, in the dogs, salivation, yawning, vomiting, paresis of the hinder limbs, and deep somnolence; in the rabbits the symptoms were similar, with the exception of vomiting.

The excretion of albumen followed the administration of doses (4 or 5 *decigrammes* = 6 to 7½ grains), which caused death in from one to six hours. When smaller quantities (2 or 3 *centigrammes* = 0.3 or 0.45 grains) were injected three times daily, albumen was observed on the second or third day; if no more morphia were injected, it reached its maximum on the fourth day, and then diminished gradually in quantity. In dogs, after the prolonged use of morphia, I also observed loss of appetite, restlessness, and diarrhoea.

In speaking of these experiments on animals, I must take the opportunity of mentioning a fact which is confirmed by an observation on man which I communicated last year; namely, that fatal doses of morphia—as is the case in poisoning by carbonic oxide,\* chloroform, chloral,† and curare‡—cause sugar to appear in the urine. In six dogs which I poisoned with morphia, and in which death occurred in from two to six hours, I found, in five, that the albumen was accompanied by sugar, characterised as such by its behaviour with Fehling's and Böttger's tests, by fermentation, and by rotation of the plane of polarisation to the right; it was remarkable that Trommer's test produced a complete reduction of colour, but no precipitate of oxide of copper.

From the materials before me I will select four cases as examples.

CASE I. Dr. X., directing physician of a hospital, in 1870 began to use morphia injections on account of neuralgia. He continued the practice—except during an interval of eight weeks, when he took 20 grammes (five drachms) of tincture of opium daily—until June 1876, injecting an average quantity of 22 to 30 grains of morphia each day. When he had used the drug half a year, toxic symptoms appeared in the form of disturbances of digestion, fever, cramps of the sural muscles, sweats; in 1874 he also had impotence, paresis of the recti interni, and of the bladder (the symptoms improving or becoming worse in direct proportion to the quantity of morphia injected); and, finally, he had the intermittent fever of morphinism, which assumed first a tertian, and then a quotidian character.

The patient was tall, pale, dull, without energy, and having no pleasure in life. The panniculus adiposus was well developed. He had trembling of the limbs. He had during a year had an eruption in the eighth intercostal space, which, except for the absence of pain, resembled herpes zoster.§

\* Kühne, *Lehrbuch der Physiol. Chemie*, 1868.

† *Berliner Klinische Wochenschrift*, No. 27, 1876.

‡ Dock, *Pflüger's Archiv*, Band v; and Winogradoff, *Virchow's Archiv*, Band xxvii.

§ On Herpes Zoster, Pemphigus, and other Skin-Diseases, after Poisoning (as with carbonic oxide), see Leudet, *Archives Générales de Médecine*, vol. i, 1865; Charcot's Clinical Contributions; and de Mougeot, *Recherches sur quelques troubles de nutrition consécutifs aux affections des nerfs*, Paris, 1867; also A. Eulenburg, *Ueber Cutane Angioneurosen*, *Berliner Klinische Wochenschrift*, 1867; and G. Lewin, *Ueber den Einfluss der Nerven auf die Erzeugung von Hautkrankheiten*, *Zeitschrift für Prakt. Medizin*, 1877, No. 2.

\* Read before the Berlin Medical Society, November 22nd, 1876. *Berliner Klinische Wochenschrift*, February 5th, 1877.

The heart and lungs were normal ; the spleen was enlarged.

The sudden withdrawal of the morphia was followed by the usual constitutional symptoms ; these, with diplopia which was present, disappeared in five days. No psychical reaction was observed during the period of withdrawal, in spite of the large doses of morphia and the length of time during which it had been used.

The patient's urine was examined daily from the time of his admission. At first its specific gravity, although the quantity was only moderate, was 1006 ; and in three weeks it rose to 1014. During about three weeks the quantity of albumen was very abundant ; it then slowly diminished, and disappeared in the fourth month. No formed elements were found in the urine. The alkaline solution of copper was reduced, without being precipitated as oxide.

In spite of the discharge of albumen, the weight of the body increased by nine kilogrammes (nearly twenty pounds) during the patient's five weeks' stay in the institution. At his departure, the intercostal eruption was disappearing. He has regained his energy, and is again performing the duties of his office.

CASE II.—Sister Mathilde, deaconess of a Westphalian hospital, suffered, in September 1870, from articular rheumatism, and from this time was addicted to the use of morphia. She made daily injections of as much as fifteen grains, and increased the dose in order to obtain its stimulant effects when she felt dull and fatigued through her labours. Up to 1874, the morphia had no remarkably bad effect on her health ; she then had tertian intermittent fever, with delirium during the paroxysms. This fever was a puzzle to the then physician, as malarious diseases did not occur in the district, and treatment with quinine was without effect : it was intermittent fever from morphinism (morphia-ague is a convenient term). Her last attack occurred two days before her admission.

The patient was of middle height, had a fairly good panniculus adiposus ; her face was reddened ; the pupils were unequal ; there was slight paresis of the bladder ; the spleen and liver were not enlarged ; the heart, lungs, and sexual organs were normal. She complained chiefly of dyspepsia, neuralgia, profuse sweats, sleeplessness, and double vision. The patient was very much exhausted by her journey to Berlin, so that the treatment of the morphomania was deferred for five days, during which the usual quantity was injected.

The total withdrawal of the morphia was followed by nearly all the usual symptoms—restlessness, chilliness, twitchings of the muscles, formications, retching and vomiting, diarrhoea, sneezing, yawning, hiccup, and delirium ; and for some days there was perverted taste.

The double vision disappeared at the end of a week ; but the inequality of the pupils remained during the whole time she was under treatment ; sometimes one, sometimes the other pupil being dilated.

A phenomenon which not unfrequently occurred in the cases under my observation, and to which Professor Westphal directed my attention eight years ago, is worthy of notice. After the severe symptoms of the period of abstinence have disappeared, and the patients seem to be convalescent, the whole of the symptoms suddenly break out again. This renewed outbreak has, however, no further influence on the course of the case, and generally

lasts only one or two days. In this patient the relapse was severe ; it lasted thirty-six hours. After remaining in the institution six weeks, she left in good health.

Examination of the urine gave the following results. The specific gravity varied from 1007 to 1012. The urine reduced alkaline solution of sulphate of copper, turned the plane of polarisation to the left, and showed a remarkable amount of albumen. Microscopic examination during the first fourteen days of her stay in hospital detected waxy cylinders and white blood-corpuscles ; five weeks later, there were only a few traces of albumen. According to information received from Dr. Vormann, the directing physician of the hospital to which Sister Mathilde belongs, this had entirely disappeared three weeks after her return.

CASE III.—Dr. S., a medical practitioner, admitted on June 17, had, in consequence of acute rheumatism, become accustomed to use morphia, of which he injected from half a gramme to a gramme daily. Under its use he lost about 15 lbs. of body-weight.

The patient was under the middle size, and had a fairly well developed cushion of fat ; he had trembling of the hands ; no disease of the heart or lungs could be found. After the immediate withdrawal of the morphia, he had the usual symptoms in a high degree, especially paroxysms of sneezing. After eight days, his appetite returned ; but at the end of fourteen days there was still a longing for morphia, and his mental state was not yet normal.

Examination of the urine gave the following results. The specific gravity varied from 1026 to 1035 ; sugar was tested for, but was not found. Albumen was distinctly present, but in small quantities ; no structural elements were present. After the albumen had disappeared for some days, it was again observed for a short time. When the patient left the institution, after a stay of four weeks, no albumen could be found in the urine.

CASE IV.—Herr H. suffered from hereditary tendency to migraine, had secondary syphilis, and, since 1873, had been addicted to the use of morphia on account of syphilitic iritis. He injected from a gramme to a gramme and a half daily. On admission, the patient was well nourished ; he had a syphilitic skin-eruption, nodes on the forehead, and an enlarged spleen ; there were diminished appetite, much thirst, excessive sweating, headache, and slight ptosis. He said that he had become impotent since he used morphia.

The symptoms attending the withdrawal of the morphia were severe ; they consisted in rigors, yawning, sneezing, vomiting, diarrhoea, &c. At the end of five days they disappeared, but returned for twenty-four hours three days later, after which they entirely ceased.

On the tenth day, treatment by mercurial inunction was commenced. The sexual functions manifested their restoration by the occurrence of erections ; the urine yielded albumen, without structural elements, until the cessation of the abstinence-symptoms—a proof that the albuminuria could not be the result of the syphilis.

You are aware, gentlemen, that all the morbid phenomena of morphomania, such as intermittent paroxysms, diplopia, amenorrhoea, impotence, and albuminuria, are to be combated by therapeutic means—by the withdrawal of the morphia.

I must again emphatically speak of the sudden withdrawal of the morphia, which is contraindicated only when the patients are weakened and exhausted



by previous insufficiency of food, by illnesses, parturition, &c.: in these cases their strength must be raised by suitable dietetic means. If, however, we commence with the sudden withdrawal of the drug, we must not neglect to give the patients alcoholic stimulants, along with easily digestible food, every two or three hours, in spite of their refusal and opposition. In this way the dreaded collapse may be avoided, which appears to have its source, not in the sudden withdrawal of the morphia, but in the state of inanition of the patients, arising from the refusal of food during whole days, and from vomiting and diarrhoea during the early days of abstinence.

There is no reason for fearing danger in hospital practice, with a sufficient medical and assistant staff; but in private practice the whole of the arrangements necessary for the treatment of these patients are but rarely available.

According to my own observations and those of Richter and Leidesdorf, as well as those of Fiedler of Dresden, who has especially directed the attention of physicians to the abuse of injection of morphia, and has exposed the disastrous results of this abuse in a series of histories of characteristic cases, the treatment by sudden withdrawal is easy, short, and safe.

When we speak of medical supervision, we understand that in severe cases (and these at once manifest their character) the physician must during the first five days of abstinence be in the close neighbourhood of the patient, or at least must be accessible in the shortest space of time that is possible; that he must comprehend at the right moment when a real state of debility sets in, and must not allow himself to be influenced by any of the slight intercurrent symptoms (such as increased temperature) frequently observed during the first days of abstinence.

Nearly all the subjects of morphiomania bear the withdrawal comparatively well, and show no signs of collapse; this can only occur when the circulation and respiration have become sympathetically affected.

While I distinctly advocate the sudden withdrawal of the morphia, I as earnestly plead for the use of morphia-injections by the physician who is treating the case, if the least danger appear. Injections of morphia, rightly used, remove the danger.

With respect to the deceptions to which the physician is liable in the treatment of morphiomania, the first thing of all to be done is to find a method by which, in a short time, evidence may be obtained whether and how much morphia the individual has used behind the physician's back. Dragendorf's method meets this requirement, even when only small quantities of urine (50 to 100 grammes) are used. The process is in brief as follows. The urine is concentrated; in order to separate the salts, the residue is treated with alcohol, which is driven off, and the watery solution is warmed and shaken with amyl alcohol to eliminate the urea. From the residue, morphia separates itself, and is detected by Husemann's test.

Morphia is eliminated by the urine even when very small quantities are used; doses as small as 15 milligrammes (nearly a quarter of a grain) can be qualitatively detected by this method. In the subjects of morphiomania, this excretion does not go on so rapidly, as on the fifth and sixth days after the beginning of abstinence morphia is still to be found in the urine. A patient who continues to have morphia in his urine after eight days is continuing to inject it, in spite of all his assertions to the contrary.

This sure method of testing for morphia is not only applicable to morphiomania, but has also a forensic value.

Before I conclude, allow me to return once again to the examination of the urine. I desire to direct your attention to a hitherto unrecognised fact. While examining carefully filtered rabbits' urine, I found a slight cloudiness produced by heat and nitric acid. A young friend of mine, Dr. Ludwig Lewin, who happened to be in my laboratory while I was engaged in this examination, and to whom I had communicated the occurrence of albumen in the urine of the subjects of morphiomania, maintained that the cloudiness was not produced by albumen. To convince me, he filtered the fluid through charcoal, and no trace of albumen could be found in the filtrate. As, however, I had still no doubt of the albuminous nature of the cloudiness, I concluded that charcoal had the property of absorbing albumen. Experiment confirmed this supposition. Diluted serum-albumen and albuminous urine from a child with scarlatina, when filtered through charcoal, gave no trace of albumen. Charcoal has then the property of absorbing albumen in solution.

It now remains only to seek the source of the albumen and sugar in acute and chronic poisoning by morphia. In the absence of positive pathological observations, we can only use hypothesis. Whether in acute poisoning the sugar- and albumen-centre is affected, whether in chronic poisoning the albuminuria is to be referred to functional disturbance of the vascular system, remains a matter for further investigation.

A. HENRY, M.D.

#### FOVILLE ON THE RELATIONS BETWEEN TROUBLES OF MOVEMENT IN GENERAL PARALYSIS AND LESIONS OF THE CORTICAL PARTS OF THE FRONTO-PARIETAL CONVOLUTIONS.

DR. ACHILLE FOVILLE, jun., begins a paper on this subject in the *Annales Médico-Psychologiques* for January 1877, by referring to the investigations of Hitzig and Ferrier, proving that there are local centres on the surface of the brain, controlling movements of the limbs and other parts. He quotes the results of M. Lépine, and shows that, if the centres governing the limbs have exclusively a cross action, those governing the lips, tongue, and jaws, have a bilateral action.

He next gives the predominant symptoms of general paralysis; and, as the one anatomical character, he gives alteration of the cortex, with adhesion of the membranes, and softening of the subjacent grey matter. He admits that many other diseased states exist in general paralysis, such as atheroma of vessels, fibrosis, change in the ependyma, &c., but these are not pathognomonic. The adhesions are rarely general; their predilection is for the anterior portions of the frontal lobes; then the parietal regions, specially about the fissure of Rolando; posteriorly, adhesions are rare and scattered. Up to the present time, no relation between the symptoms and these pathological changes has been established. Certainly no relation can be shown to exist between disease of the medulla or of the ependyma, and the mental and motor symptoms.

He then proceeds to show, how slight electrical irritation corresponds to early disease affecting the surface of the brain, and that, just as severe irritation

will produce convulsive movements, so prolonged disease of the surface will produce the same thing.

The first period of general paralysis is one of congestion of the anterior parts of the surface of the brain, which gradually produces sclerosis and degeneration of the cells; this answers to the slight superficial excitation, prolonged excitation, and destruction of motor centres. The fact that, in general paralysis, small groups of muscles or single muscles may be specially affected, is explained by local irritation of a small centre. And again, the variety of the motor troubles in the same case may be explained by congestion at various times of different parts. Again, the short duration of many of the motor paralyses is explained in the same way; and, just as convulsive seizures, due to electrification, are transitory, so are the general paralytic. The progress of the paralysis is not steadily progressive, but intermittent.

M. Foville examines into the more particular affections of general paralysis, and their relationship to the fronto-parietal changes.

The most characteristic symptom of general paralysis is thickness of speech or dysphasia; and the best localised of functions is speech, according to Broca.

Ferrier has shown, that near the same spot is a centre controlling the movements of the tongue and jaws, and higher up, a centre for the lips and muscles ruled by the facial nerve, and these spots are the ones most affected by adhesions. The aphasia of general paralysis, too, is rarely persistent. If, with the aphasia, we have some loss of power on the right side, it is much easier to believe that one diseased part has produced both, than to suppose the dysphagia due to bulbar disease, and the hemiplegia to an affection of some other part. The grinding of the teeth, common in general paralysis, is easily explained by irritation of the centre for the muscles of mastication.

It has been found that, at the posterior part of the first frontal convolution, where adhesions of the membranes are also frequent, there is a centre for the head and neck; and in the epileptiform seizures version of the head is common. The centres governing the movements of the upper and lower limbs are all near the same spot. The centre controlling the oculo-motor nerve (third pair) is situated much further back, and we find this region rarely affected by adhesions; and, similarly, we find but rarely the eyeball muscles affected in general paralysis.

M. Foville sums up as follows.

1. General paralysis of the insane has, as pathological symptoms, constant motor troubles, and anatomically a constant alteration of the cortical substance of the fronto-parietal convolutions.

2. The relationship between general paralysis and the changes described in the cord and medulla is not clear, but,

3. Hitzig and Ferrier's discovery of an excitable and motor region on the surface explains all.

4. The localisation of small centres explains the many local paralyses seen in the disease.

5. The excitation produces the hyperæmiæ that produce the other symptoms, and end in degeneration.

6. In general paralysis, the cortical lesions of the fronto-parietal convolutions are the direct causes of the motor troubles; on the locality and intensity of the lesions depend the nature and intensity of the ataxic accidents, spasmodic and paralytic.

[M. Foville's is a thoughtful paper, and one that only requires the confirmation of *post mortem* ex-

aminations. It is altogether more satisfactory than the vaso-motor theory. Yet we are only removed one step further back; we still have to learn why these parts of the surface are more affected than others. It is possible that their special vascular supply lies at the root of their being specially affected. General paralysis includes such a host of varieties of disease, that no one condition or set of conditions governs it.—*Rep.*] GEO. H. SAVAGE, M.D.

## MEDICAL EVIDENCE FROM THE STATE OF THE OVUM OR FŒTUS IN CASES OF CRIMINAL ABORTION.

Is it possible from the examination of the aborted ovum embryo, or foetus, to give an opinion whether the abortion has resulted from accidental or criminal causes? This question has been lately considered by the *Société de Médecine Légale*, in reference to a case which occurred to M. Gullard. On this occasion, M. Gullard gave a strong opinion that the abortion was the result of a criminal act. The reasons he assigned were based partly on an anatomical examination of the aborted ovum, and partly on moral circumstances. It is with the former only that an English medical jurist is concerned, the moral circumstances in this country being left for the consideration of the jury.

The anatomical reasons assigned by M. Gullard for his opinion that the abortion was criminal, appeared to the society so unsatisfactory that they were referred to a committee for a report. The conclusions at which the committee arrived at were these.

1. Abortion in the *first month* of pregnancy is always attended with the expulsion of the complete ovum (*en bloc*), and it passes from the woman unperceived.

2. The aborted ovum may, however, in some cases, undergo spontaneous rupture during its passages through the neck of the uterus.

3. From the *second* to the *third month* the ovum may be also expelled in a complete state; but this is not usual, except when the foetus is dead. When it is living it is more common to find that it has undergone rupture. This depends on various conditions, the degree of resistance offered by the ovum, the force of the uterine contractions, and on the state of the neck of the uterus, &c.

4. The absence of the foetus does not prove, as M. Gullard inferred, that there has been criminal interference; for if the dead ovum have remained long in the uterus, the foetus or embryo may disappear by solution.

5. Dating from the *third month*, it is usual to find the ovum broken up,—abortion taking place at two periods, with the discharge of the foetus followed by that of the placenta.

6. At the *fourth month* and subsequently, the abortion may be regarded as a delivery on a small scale. At this period, it is an exceptional occurrence to find the ovum expelled entire (*en bloc*).

7. Up to the third month, the cord is too weak to resist the force required for the extraction of the placenta, and *à fortiori* it would not be strong enough to allow an inversion of the parts by traction, as assumed by M. Gullard.

8. Rupture of the membranes, therefore, taken alone, cannot be regarded as a sign of intentional abortion, and even if accompanied with an inversion of the membranes, it cannot be admitted as sufficient



evidence of a criminal act, even in the early stage of pregnancy.

It seems that M. Gullard had somewhat hastily assumed that the act of abortion in his case was *criminal*, because—1. The ovum at two months had not been discharged entire; 2. Because it presented an aperture through which the placenta, with the cord attached, was inverted, the inversion having been produced, as he supposed, by traction of the cord; 3. The cord was ruptured at the umbilicus of the foetus; 4. The foetus had been expelled living: and 5, it could not be found.

The reasons here assigned appear very weak, and wholly insufficient to allow a charge of criminality to be based upon them. The report of the Commissioner shows, too, that they have no foundation in fact.

ALFRED S. TAYLOR, M.D.

### CASSELLS ON MOUTH-BREATHING.

In the *Edinburgh Medical Journal* for Feb. 1877, is a paper by Dr. Cassells of Glasgow, on "Mouth-breathing and its consequences, especially to the apparatus of hearing." The intention of the author is to demonstrate the truth of the proverb, "Shut your mouth and save your life," by showing that shut mouths and open nostrils are conducive to good health; and conversely, that open mouths and shut nostrils are injurious not only to the general health, but especially to the health of the organs of hearing: to show, in fact, that neither perfect health nor perfect hearing is compatible with the habit of mouth-breathing.

The author commences by reference to the works of previous writers on the subject, especially Catlin and Guye of Amsterdam (an abstract of whose paper, from the pen of the present reporter, appeared in the *LONDON MEDICAL RECORD*, March 1876), and then proceeds to bring evidence to show that man is by nature a nose-breather.

This opinion he bases on the following propositions. The newly born infant can only respire by the nostrils; air inspired by the nostrils is totally different from that inspired by the mouth; disease of the nasal passages begets abnormal tissue-changes in their structures; and, lastly, nasal breathing is essential to perfect hearing. Dr. Cassells then proceeds to prove that these statements are well founded. He states, in the first place, that he has satisfied himself by experiments which have been corroborated by others, that new-born infants can breathe only by the nostrils, and that if these be closed, even though the mouth be opened, suffocation will ensue. That the air inspired through the nostrils is totally different from, and better fitted to enter the lungs than that inspired by the mouth alone, is, the author ventures to assert, the result of the experience of everyone who has profited by his experience of life in the murky and fog-laden air of our cities.

In support of this proposition, also, is adduced the fact of the difference between the behaviour of the lining membrane of the nasal and mouth passages respectively, when air is passed over them for any length of time. Personal experiment will prove to anyone that prolonged breathing by the mouth produces a dry and parched condition of that cavity, the act of respiration becoming at last disagreeable, and even painful. In nasal respiration, on the other hand, no such painful and distressing sensation occurs, the lining membrane of the nasal cavities remaining

moist. (The dryness of the mouth from mouth-breathing may be frequently remarked in the case of persons who sleep with the mouth open. *Rep.*) It is shown that air is only fitted to enter the lungs after it has undergone the purifying influence of the nasal passages. The next fact, and one which the author considers of great importance, is that the habit of mouth-breathing ultimately unfits the nostrils for the passage of air. "Basing our impression on a well-known physiological law, one might expect that the changes set up in the tissues of the disused nasal passages in a case of confirmed mouth-breathing would be of the nature of atrophic degeneration; and observations show that this expiration is to a large extent, if not altogether, realised: so I would be disposed to regard the ulcerations, the congestions, and the various forms of hypertrophy of the Schneiderian membrane seen in such cases." Whether or not the origin or predisposing cause of these changes may consist in a loss of local tone through a deficiency of supply of nerve-force, it seems at present difficult to say; but it is no less certain that this habit of breathing, however begun, does aggravate already existing tissue-changes such as have been mentioned, and may, the author believes, give rise to them *de novo*. The fact also remains that mouth-breathing leads to narrowing of the nasal passages, and in many cases to complete closure of them.

The recognition of a case of confirmed mouth-breathing is easy. The retracted lips, open mouth, quality of the voice, and stertorous breathing, point out the individual at once; and confirmation may be found by inspecting the nasal passages, and by holding a mirror below the nostrils, the undimmed surface showing that no air passes through them.

With regard to the origin of the habit, it seems probable that it originates in childhood, during some of the attacks of acute nasal catarrh frequent at that time.

As to treatment it is essential, as a primary step, to break the habit. This consists in shutting the mouth, and by an effort of the will keeping it shut. Simply closing the mouth as here directed several times a day, at first for short and afterwards for long periods, especially when walking in the open air, cannot fail in time to re-establish nasal respiration. (Probably this end might be hastened by the use of an impermeable "contra-respirator" over the mouth, as recommended by Dr. Guye, or of, what would answer almost, if not quite, as well, and is not unsightly, the so-called "invisible respirator," which consists of a plate of metal worn in front of the teeth inside the lips, and necessitates nasal respiration. *Rep.*) If, after a short time nasal respiration do not become easy, it may be necessary to treat the local defect of the nasal passages.

Next the author considers the connection between mouth-breathing, in its confirmed form, and disease of the auditory apparatus, and begins by stating that the integrity of this apparatus, and therefore of the sense of hearing, is only maintainable by a certain degree of intratympanic tension. This normal degree of intratympanic tension is only possible when the nostrils are open, and nasal respiration is carried on and is disturbed at once by any narrowing (or closure) of those canals. Dr. Cassells then reviews at some length the evidence which warrant the assumption of the hypothesis of a normal degree of intratympanic tension being necessary for the maintenance of the auditory tissues and function in their integrity, and which support the statement that this tension is only possible when the nostrils are

open, and in proof adduces the following simple and convincing experiment, which may be performed by any one *whose ears and whole auditory apparatus are perfect*, upon himself. With the forefinger and thumb, close the anterior orifice of the nostrils and perform inspiration by the mouth. Now and again the saliva finds its way to the pharynx and causes swallowing. This act repeated several times causes in a greater or less degree a feeling of tightness in the ears, perhaps a little vertigo, and a varying amount of subjective aural tinnitus, with considerable dulness of hearing, especially of articulate sounds. Deglutition with *open* nostrils will fail to produce any similar effect.

Speaking of the relation between mouth-breathing and ear-disease, the author says the changes produced are as follows. The membrana tympani becomes more and more concave after a time, and its vessels become congested; its fibrous laminae become atrophied by the continuous one-sided pressure, and it finally collapses in its entire extent; at the same time the ossicular chain, suffering from the same cause and sharing in the evils accruing to the membrana tympani, becomes at last immovable from stiffening of the delicate articulations and impaction of the base of the stapes.

The tendon and ligament of the tensor tympani, relaxed at first by these changes, in time contract, so that were it possible, which it seldom is, to remove the other consequences of altered tension, this contraction of the tendon and ligament mars the best efforts of the practitioner to effect an improvement. In many cases this series of changes may be all the physical tissue-changes recognisable, the characteristic symptoms being gradually increasing deafness and distressing tinnitus, which diminishes and passes away as the deafness deepens. In other cases more serious sets of changes are instituted; thus, in acute nasal catarrh, the congestion of the naso-pharynx, by continuity of tissue, invades the Eustachian tubes, which become closed; the ventilation of the tympana, already impaired by the habit of mouth-breathing, is at once arrested, and the following further changes ensue: the air shut up in the tympanic cavities is speedily disposed of, and passive congestion and engorgement of the lining membrane follow as a result of the diminished pressure. If this state be unrelieved by art, free serous transudation takes place from the highly engorged membrane, which speedily fills the tympanum, giving relief for a time to the more pressing symptoms. The issues of these cases are various; the more acute symptoms may subside, and, the absorbable portions of the effused fluid being removed, some improvement in hearing power may take place, but never complete restoration as long as mouth-breathing is continued. The unabsorbed portions of the effusion may, on the other hand, become organised, and forming bands of adhesion, bind the structures together, and thus hinder even this limited restoration of hearing. Lack of conservative remedial measures at the fitting time may cause the membrana tympani to give way, and thus an otorrhœa may be established, of which neither the consequences nor the end can be foreseen.

In regard to treatment in these cases, if disturbance of tension have existed for a length of time sufficient to give rise to the changes above described, no treatment may suffice to relieve the symptoms, or even to arrest more serious evils.

The author, however, believes that these consequences are to a great degree *preventable*, if all classes

of society, at all ages, rich and poor alike, would shut their mouths and breathe through their noses.

W. DOUGLAS HEMMING.

## MÜLLER ON THE PRODROMAL STAGES OF INSANITY.

ACCORDING to Müller (*Zeitschrift für Psychiatrie*, Bd. 33, Hft. 3), many psychoses commence quite suddenly, but by far the greater number pass through a prodromal stage, lasting months or years, before they develop into a definite form of insanity. The first symptoms are usually disturbances of the mental equilibrium, obstinate sleeplessness, periods of lassitude alternating with excitability. Hypochondria, depression, and hysteria are common; capriciousness, an exalted idea of self, mental irritability, restlessness, and morbid religious inclination are also observed.

It is the universal opinion that psychoses always begin with a melancholic invasion-stage, but there are numerous cases in which this is entirely absent (see Witkowski on the Mode of Commencement of Various Forms of Insanity, LONDON MEDICAL RECORD, Feb. 1877). All psychic manifestations raised above the ordinary level, or depressed below it, must be regarded as commencing psychoses. Just as the line between bodily health and disease is an arbitrary one, so it is difficult to say at what point sanity passes into insanity.

All of us are conscious that our feelings are on some days exalted, and on others depressed, without any change having taken place in our outward circumstances; these slight departures from the normal fall quite within the bounds of health, but are yet really slight movements in the directions of disease, and only have to become permanent in order to be regarded as such. Of great interest in this connection are the variations of the psychical life which manifest themselves in women at the menstrual, puerperal, and climacteric periods during health, and also those caused by diseases of the sexual organs.

Cases of congenital tendency to disease, in which a commencing psychosis is directly inherited from father or mother, are frequently observed; and here we have not usually to do with a disturbance of the whole psychic being, but rather with alterations of consciousness having the character of psychic neuralgia. It is in these cases that we see how the wild graft develops itself upon the normal mental existence, unhindered by the highest medical skill, the most energetic will, or the most favourable surroundings.

Lastly, a group of symptoms is recognisable as the prodromal stage of general paralysis; they consist in psychical defects and weakness of memory of the most varied form and colour. They mostly occur in patients who have been the subjects of syphilis or mercurialism.

All the above conditions should be at their commencement the subject of medical observation and treatment. They all, to a greater or less extent, rob the healthy mental organism of its powers of resistance; they are the worms which undermine the strength from within, and only a puff of wind is wanted, under unfavourable circumstances, to overthrow the little remaining mental strength, and develop the latent bud into real disease.

In the prodromal states described above, the author distinguishes three distinct forms of morbid



psychical disturbance, to which he proposes to give the following names: Psychokinesis, Psychodynia, and Psycholysis.

1. *Psychokinesis* is the commonest form of a commencing psychosis; it involves the whole of the psychic functions in continuous alternations between depression and exaltation, and is in fact a disturbance of the psychic equilibrium without preventing the patient from having a true consciousness and appreciation of his condition. Cases of this kind exhibit varying degrees of intensity, and develop into the *folie circulaire*.

2. *Psychodynia* is the term used to designate the condition, compared to a psychic neuralgia, in which some one idea, sensation, or passion, as it were, forcibly intrudes itself upon the patient's attention so constantly that he cannot shake it off, and which ultimately disturbs the harmonious working of all the psychic functions. In the early stages these compulsory ideas, &c., are recognised by the patient as such, and he is conscious of his condition, but there is great danger of his sooner or later losing this just appreciation of his state.

3. *Psycholysis* is the name given to those commencing psychoses which the author has observed as exhibiting psychic weakness from the very beginning. This form is chiefly characterised by affections of the energy of memory, of psychic reproduction. Patients thus affected may appear perfectly well, but their memory of names and places is greatly impaired. These defects are specially shown in the patient's writings, the absence of the substantive or verb in their sentences foreshadowing usually the paralytic form of insanity.

One well chosen case is described in illustration of each of the above three forms of disease. The author says he has given a general outline of the chief forms of commencing psychic disease, but does not allege that he has treated the subject exhaustively. He hopes that his contribution may serve to direct more attention to the subject.

CHAS. S. W. COBBOLD, M.D.

#### KIND ON THE HEALTH OF THE BROTHERS AND SISTERS OF IDIOTS.

IN an article on this subject, (*Zeitschrift für Psychiatrie*, Bd. 33, Heft 5 and 6), Dr. Kind says that idiocy is taken to mean a weak condition of the activity of the brain and nervous system, commencing at an early period of life, and being incurable. It is this last characteristic which makes the prevention of the evil, or, in other words, its etiology and heredity, a question of great importance. If the cause of the evil be found in the parent, it is evident that the hurtful influence will be limited to one child when the illness of the parent is temporary; if the morbid condition in the parent be permanent, it is reasonable to suppose that the harmful effect will make itself evident in most, if not all, of the offspring.

Dr. Kind's investigations have reference to 610 idiots. The first result is, that 54 of these (8.9 per cent.) were illegitimate children. Most of the following observations refer only to 505 of the above, all from the province of Hanover, and of these 48 (9.5 per cent.) were illegitimate. The proportion of legitimate to illegitimate births in the same province

in the years 1873 and 1874 was 100 to 7 and 100 to 6.6 respectively.

Of 540 of the idiots, 157 were the firstborn, and 122 the second in the family, etc. Of 542 idiots, 34 (6.27 per cent.) had no brothers and sisters.

19.00 per cent.	had 3	brothers and sisters
14.02	"	2 "
14.02	"	4 "
11.99	"	1 "
11.07	"	5 "

In 505 families containing idiots there were altogether 2602 children, giving an average of 5.15 children to each family. The numbers of children to each marriage used to average in Hanover only 2.92 in the towns, and 3.65 in the country. The number to each marriage on an average of ten years for the whole of Prussia was 4.25. Even in the kingdom of Saxony, where the proportion of births is the highest known (4.60 in towns, and 4.13 in the country), the size of the families falls below that of the above families, which include idiots.

Of the brothers and sisters of the idiots, it was unknown whether 178 of them were living or dead; of the remaining 1919, 436 (22.7 per cent.) were dead. It is impossible to say if this is a large proportion or not, as the ages at which they died were mostly unknown. In 280 of these the cause of death was ascertained.

From Eclampsia	78 = 27.86 per cent.
" Meningitis & Hydrocephalus	25 = 8.93 "
" Apoplexy	1 "
" Suicide	3 "

= 38.21 of the total deaths whose causes were ascertained.

Of 1383 living brothers and sisters, respecting whose state of health information could be obtained, 1221 (88.29 per cent.) were said to be well, and 162 (11.71 per cent.) ill. Of 161 of these latter, the form of whose illness could be learnt, 96 suffered from severe affections of the nervous system, including 63 from dementia or imbecility, with or without epilepsy or eclampsia; 7 from epilepsy and eclampsia, without imbecility; 11 from other forms of insanity.

If we subtract from the total 2602 children 433, concerning whom information was defective, 2169 remain, of whom 505 are idiots; 107 died from (or with) disease of the brain or nervous system, and 96 suffer from similar affections. Thus a total of 708 (32.64 per cent.) are or have been the subject of disease of the nervous system.

Remembering that a number of the families to which the above statistics relate are still increasing in size, and probably producing children with the same tendency to disease, and that the accounts of the health of the various families were mostly given by ignorant parents who for many reasons would be apt to make little of the diseases of their children, or even purposely to give false reports concerning them, it is evident that the figures given above are more probably below the truth than above it. If it be allowed that the number of cases investigated is sufficient to found generalisations, the following propositions are justified.

1. Among idiots many (9.5 per cent.) are illegitimate children.
2. A large number of idiots (29.07 per cent.) are firstborn children.
3. The second, third, and fourth children of families

are in arithmetical progression less liable to idiocy than the firstborn.

4. Families which include idiots are, as a rule, large ones (an average of 5.15 children in each).

5. Nearly one-third (32.64 per cent.) of the children of these families suffer from severe affections of the brain and nervous system.

C. W. S. COBBOLD, M.D.

## ANATOMY AND PHYSIOLOGY.

LANGENDORFF ON THE ELECTRICAL EXCITABILITY OF THE BRAIN OF THE FROG.—O. Langendorff (*Centralblatt für die Medicin. Wissenschaften*, No. 53, 1876), finds the following results from experiments. 1. Movements can be produced in the muscles of the body by the stimulation of certain parts of the brain with weak constant or interrupted currents. 2. On simultaneously stimulating both sides of the brain, the movements occur in all four extremities, and in some muscles of the trunk. On stimulating one side, some movements occur in the trunk and in the extremities of the opposite side. 3. The "excitable zone" lies in the parietal area of the hemispheres. Stimulation of the other parts of the brain, if weak currents be employed, is without effect. 4. After complete separation of the cerebrum from parts lying behind it, the results of stimulation disappear. 5. Narcosis from ether abolishes the electrical excitability of the brain, whilst it is not at all affected by removal of all the blood from the frog. 6. By stimulation of a certain spot on the intact skull of the frog, the same effects may be obtained as by the direct application of the current to the hemispheres on the same side. It lies between the membrana tympani and the eye, and is easily recognised by a line, generally dark-coloured, which connects the eye and the ear.

ROSSBACH AND QUELLHORST ON THE PHYSIOLOGY OF THE VAGUS.—Rossbach and Quellhorst (*Vorhandlung. der Physik-med. Gesellschaft zu Würzburg*, Band ix, and *Centralblatt für die Medicinischen Wissenschaften*, No. 43, 1876), have proved that vaso-motor nerve-fibres pass in the vagus to the abdominal organs; for on stimulating them, contraction of the abdominal vessels was produced, and thereby the blood-pressure raised. To reach the vagus, the vertebral ends of several ribs were removed, a hole made in the wall of the thorax, the vagus separated from the cesophagus, then divided, and its peripheral end stimulated either mechanically or electrically. In both cases there resulted a considerable increase in the blood-pressure in the carotid and femoral arteries; the frequency of the pulse remaining unchanged. If the heart be brought to a standstill by stimulation of the peripheral end of the vagus in the neck, there is, as is known after cessation of the stimulations, an increase of the blood-pressure above the normal. The authors find that this increase occurs even after the cardiac terminations have been paralysed by a moderate dose of atropin, 4 millogrammes (0.06 grain), so that stimulation of the vagus no longer produces standstill of the heart. The increase takes place immediately after the stimulus is applied. They ascribe this increase in both cases to the stimulation of those vaso-motor fibres which run in the abdominal portions of the vagus to the abdominal viscera. It does

not occur when the abdominal vagi are divided. The vagus in the neck and abdomen, therefore, like the splanchnics, contains vaso-motor fibres for the abdominal viscera.

ROSENTHAL ON REFLEX ACTION.—J. Rosenthal has continued his researches on the subject (*Sitzungsberichte der Phys-med. Gesellschaft zu Erlangen*, 1875), and finds that under normal conditions every sensory stimulation of the lower extremities of a frog is followed by flexion of the limb. After poisoning with strychnin, however, only extensor movements occur. The difference between the *flexor* and *extensor* reflex movements consists in this, that by strychnin the *extension* of the reflex is facilitated through other conducting channels, which, in general, offer considerable resistance. Poisoning with strychnin facilitates the occurrence of reflex movements. Still this "increase of reflex excitability" is inconceivable. The results previously recorded for "reflex-time" and "time of transverse conduction" are valid, as well for the flexor as for the extensor reflex action. The absolute value of these times is diminished by strychnine poisoning. The diminution is greater for the time of transverse conduction than for the reflex time. The rapidity of transmission of an excitation in motor nerves is independent of the strength of the stimulus. Poisoning with strychnin has also no effect. Cooling of the spinal cord always diminishes the reflex excitability considerably. The reflex time and the time of transverse conduction are also increased thereby, the latter much more so than the former. Although every part of the cord can transfer impression from one part to another, still the transference, and especially the transverse conduction, does not occur with equal facility in all parts of the cord, and not always at the place where the nerve enters the cord. The reflex transference and the transverse conduction take place most easily in the medulla. If the connection of the peripheral nerve with the medulla oblongata is interrupted, stimuli formerly sufficient to produce an effect are inactive, whilst over-maximal stimuli may still be effective. Weak stimuli produce a reflex action only on one side, strong stimuli movements in both sides. The author confirms the reporter's observations that a summation of sensory impressions following each other takes place in the spinal cord.

RÖHRIG ON THE SECRETION OF MILK.—A. Röhrig (*Virchow's Archiv*, Band lxxvii, and *Centralblatt für die Medicinischen Wissenschaften*, No. 41, 1876), employed goats in his experiments. A cannula, connected with an aspirator, was introduced into the cyst of the mammary gland. The milk flowed with great regularity even for three hours. Violent movements increased the secretion. The mammary gland in the goat is supplied by the middle and inferior branches of the external spermatic nerve.

Section of the middle branch diminishes in a marked manner the secretion, whilst electrical stimulation of its peripheral end greatly increases it. Section of that filament of the middle branch which supplies the teat produces collapse, and stimulation of its peripheral end only erection of the teat; whilst stimulation of the central end produces reflexly an increase of secretion.

The author is of opinion that the ramus glandularis is not a secretory, but only a motor nerve, which supplies the contractile elements of the milk-ducts. Section of the inferior branch greatly increases



the secretion (to twenty times), whilst stimulation of its peripheral end brings it to a standstill.

Any change in the blood-pressure generally, however produced, materially influenced the secretion. Strychnin, caffèin, and digitalin, all of which increase the arterial blood-pressure, increased the secretion of milk after previous section of the mammary nerves. With strychnin, the increase was fifteen times the normal amount. Jaborandi had even a still more decided effect.

Substances which diminish blood-pressure, diminish also the secretion. Chloral-hydrate suppressed the secretion almost completely for a whole day. For the first six or seven minutes it produced a considerable increase in lactation.

Bromide of potassium and atropin only produced a moderate diminution of the function of the gland.

The above experiments were made on curarised animals. Complete immobility occurred only after the injection of 130 to 150 millogrammes (little more than 7 grains) of curara into the jugular vein. A gramme and a half (22 grains), of morphia did not produce narcosis, thus affording evidence of the immunity of the goat from certain poisons.

In special experiments, it was found that every increase of blood-pressure (produced by suspending the respiration or stimulation of the central end of the vagus), or diminution of the blood-pressure (apnoea or stimulation of the peripheral end of the vagus), runs parallel to the secretion of milk.

**PODOLINSKI ON THE FERMENT OF THE PANCREAS.**—S. Podolinski (Pflüger's *Archiv*, Band xiii), proceeding from the observation of Heidenhain, that in order to prepare an active extract, the pancreas ought to lie twenty-four hours, wished to ascertain whether solutions of zymogen become active by passing a stream of oxygen through them, *i.e.*, become converted into pancreatin. The experiment confirmed this. Whilst other gases, such as carbonic acid and hydrogen, passed through a solution of zymogen, in one per cent. solution carbonate of soda were without effect, the passage of a stream of oxygen for ten minutes made the solution active for digestion. The same effect was produced by hydric peroxide and shaking the solution with spongy platinum. If the pancreas be rubbed up, and allowed to stand for twenty-four hours, it yields a much more active extract than when it is undivided. The author would ascribe the gradual passage of zymogen into pancreatin to the oxygen in the water. If the solution of zymogen were made with water which had been boiled, no pancreatin was formed. Fibrin, digested with a solution of pancreatin, was dissolved to a residue of 11 per cent.; in employing a solution of zymogen there was a residue of 76.6 per cent.; whilst the same solution treated for ten minutes with oxygen, yielded only 22.8 per cent. The dissolving power of solutions of pancreatin is not increased by oxygen.

**TILLMANN'S ON THE LYMPHATICS OF THE JOINTS.**—H. Tillmanns contributes another chapter to the histology of the joints (*Archiv. für Microscopie Anat.* Band xii). The lymphatics of tendons, fasciæ, and serous membranes, can very conveniently be injected by flexing and extending these parts. The joint of a newly killed dog was filled with a coloured fluid, and the limb flexed and extended, but no colouring matter entered the lymphatics. This would seem to show that absorption from the synovial surface takes place in a way different from that which

obtains in the case of serous membrane. By the puncture method, however, Tillmanns easily succeeded in injecting with a 0.5 per cent. solution of silver or soluble Berlin blue, a very rich net-work of lymphatics lying immediately under the epithelium and also in the subsynovial connective tissue. This he did in the large joints of the ox and horse.

The superficial lymphatics lie directly under the epithelioid layer, deeper than the finest capillaries, but superficially to the large arterial and venous branches. The author finds that the blood-capillaries do not project bare into the joint, but are covered by the epithelioid layer. No lymphatics were found in the villi of the joints.

The superficial subepithelioid lymphatics communicate with very wide vessels lying in the subsynovial tissue, where the lymph-vessels are very numerous and not unfrequently surround the blood-vessels. The vessels can be most easily injected where the synovial membrane joins the base or cartilage. No lymphatics pass from the synovial membrane, either into the subjacent bone or cartilage.

The microscopic structure of the lymphatics was studied by Stirling's method, *viz.*, digestion in artificial gastric juice. It seems that the epithelioid lining of the lymphatics is directly continuous with the elastic tissue of the adjacent tissue, thus fixing the lymphatics. The lumen of the vessels will thus be kept patent by the elastic fibres, and may even be dilated when the fibrous tissue becomes swollen. This bears out some suggestions already made by Ludwig under normal circumstances.

WM. STIRLING, D.Sc. M.D.

#### RECENT PAPER.

Graphic Study of the Movements of the Brain in the Human Subject.  
By M.M. Giacomini and Mosso. (*Gazette des Hôpitaux*, Jan. 20.)

#### MEDICINE.

**MILES ON THE DIAGNOSIS OF PERIPHERAL PARALYSIS.**—Dr. Miles, of the University of Maryland, contributes the following observations on two cases of peripheral paralysis to Seguin's series of *American Clinical Lectures* (vol. ii, No. 12).

The first patient was a man with paralysis of the muscles supplied by the anterior tibial nerve. Wasting of the muscles and absence of cerebral symptoms showed that the disease was not intracranial; and the loss of reflex as well as voluntary action in the palsied muscles showed that it was not spinal: in fact, the strict localisation of the affection to one group of muscles was of itself almost enough to decide that it was not of central origin, except it were dependent on atrophy of the motor nerve-cells of the anterior cornua, which produces the essential spinal paralysis known as "infantile" in children, and as "anterior spinal," or Cruveilhier's palsy in adults. This, however, was excluded by the presence of decided anæsthesia. The same symptom distinguished this case from those of plumbism observed by Remak, in which certain muscles of the legs—notably the peronei and extensor longus digitorum—are paralysed. The history of the case confirmed this diagnosis, for there had been a blow on the outside of the leg which had no doubt injured the external popliteal nerve, and had been followed by

pain in the region supplied by its musculo-cutaneous branch.

The other case was that of a man with double Bell's palsy, (so called diplegia facialis). Here sensibility was of course perfect, and loss of reflex action complete. [The condition of the sense of taste appears not to have been examined.—*Rep.*] These symptoms, and the fact of the muscles of the eye being involved and those of the tongue free, sufficiently distinguished the palsy from that following cerebral lesions. The appearance of the man's face was like that of a patient suffering from labio-glosso-laryngeal or "bulbar" paralysis; but the tongue was unaffected, and deglutition was unimpeded when the nostrils were held. It would have been possible for a lesion affecting the ganglia of origin of both facial nerves to produce these symptoms, but such accurately circumscribed symmetrical lesions are very rare; and the history pointed to a *coup de vent* as the cause of the paralysis. The patient had been exposed in very cold weather, and first one and then the other side of the face lost its power without any concomitant symptoms.

In both cases there was complete loss of faradic excitability in the affected muscles and in the nerves. [Neither patient came under observation until a week after the appearance of paralysis.] Galvanic excitability was also lost in both the affected nerves, but the paralysed muscles were made to contract with a weak descending galvanic current, and more strongly with the same ascending current, both on closing and opening it.

In both cases there was, no doubt, degeneration of the motor and trophic nerve-fibres, with some secondary degeneration of the muscles.

With regard to treatment of peripheral paralysis, Dr. Miles remarks on the uselessness of spinal remedies like strychnia, and of counter-irritation by stimulating liniments. The first object is of course to find the cause of the injury to the nerves, as an abscess or a syphilitic node, and, if still existing, to remove it. When, as in the two cases just described, the injury has been already inflicted, and only its effects remain, the only efficient treatment is electrical stimulation of the affected nerves and muscles. The galvanic and the induced currents may both be useful, but Dr. Miles prefers the former, slowly interrupted, the cathode being placed on the nerve in fault. The current should not be strong, as measured by the sound muscles, and should be applied even when it fails to excite contraction, and even when Erb's degenerative reaction described above has made its appearance. P. H. PYE-SMITH, M.D.

**BERGER ON ATHETOSIS.**—In the *Berliner Klinische Wochenschrift* of January 15th and 22nd, Dr. O. Berger, of Breslau, relates a well-marked and carefully observed case of athetosis, presenting all the characteristics of the disease as first described by Hammond. The patient is a strongly built young man, 19 years of age, whose parents are alive and perfectly healthy. Of his five brothers, 3 died in infancy of convulsions, and the other two, now alive and well, suffered from the same while teething. None of his eight sisters ever had a convulsion, though three died in infancy from catarrh of the stomach and intestines. The patient was healthy until one day, when nearly a year old, he had a succession of convulsions, which lasted, with short intermissions, the whole day. Next morning the child had marked left hemiplegia, and the convulsions ceased. The paralysis was only partially recovered

from; a few months later epileptic fits, affecting the left side only, set in, and the patient has been subject to them ever since. The involuntary rhythmical movements of athetosis were first observed about two years after the original attack of hemiplegia, and they also affect only the left side. Hemi-anæsthesia of the left side co-exists with the motor hemiparesis; the whole lower limb and upper arm of the left side are somewhat atrophied, but the left forearm is rather larger than the right. The temperature of the left forearm is higher than that of the right. After the muscular movements of the left arm had been controlled for a long time, the temperatures were, right 29.4 cent. (84.9 Fahr.), left 30.5 cent. (86.9 Fahr.), but after the movements had been allowed to continue for some time, the temperature on the left side rose to 32.2 cent. (89.9 Fahr.). The author considers this conclusive proof that the muscular contractions are the cause of the increased formation of heat. The temperature in the axilla was only 0.3 degrees (cent.), and that of the calf from 0.2 to 0.6 degrees greater on the left than on the right side. The slight difference in temperature of the lower extremities is due to the movements being there very slight as compared with the upper limb.

The patient often suffers from great pain in the extremities of the left side before his fits; the latter are sometimes replaced by violent epileptic delirium lasting about a quarter of an hour, and followed by deep sleep, from which the patient awakes without any clear remembrance of what has taken place. Except on these occasions, his intellect is said to be unaffected. He is fairly educated, and employed as an office clerk, but his mother reports him as very irritable and passionate.

The points in the above case which the author considers most noteworthy are (1), the commencement of the athetosis at the early age of three years, and its unaltered continuance during 16 years; (2) the attack of hemiplegia, which took place two years before the muscular movements commenced, was ushered in by strong convulsions, and accompanied by paralysis of all the branches of the facial nerve and cutaneous hemi-anæsthesia; (3) the epileptic fits, limited to the same side of the body as the athetosis and paralysis.

Dr. Berger goes carefully over the symptoms of athetosis in general, and the above case in particular; he also points out the distinction between this disease and chorea, paralysis agitans, various muscular tremors, post-hemiplegic chorea, and certain cases of sclerosis. Much attention is also given to the pathology of this and allied affections, but no definite conclusions can be arrived at in the absence of *post mortem* observations of cases of the disease in question. CHAS. S. W. COBBOLD, M.D.

**CHARCOT ON THE TREMBLING IN PARKINSON'S DISEASE (PARALYSIS AGITANS).**—M. Charcot, in a recent lecture on *paralysis agitans* (*Progrès Medical*, December 2), particularly insisted on the following points.

1. The name *paralysis agitans* is incorrect. The term *paralysis* cannot be properly applied to an affection in which the muscular power is preserved for a long time. The affix *agitans* is not absolutely correct, because the trembling is absent in some cases in which the correctness of the diagnosis cannot be questioned. He proposes to call the affection *Parkinson's disease*, after the English physician who first drew serious attention to it.

2. M. Charcot maintains that, as a rule, the head



and neck do not take part in the tremor which affects the limbs and trunk. In those cases in which the head is observed to tremble, the oscillations are evidently communicated to it from the trunk. To prove this, he fastened a small stick, to the end of which a feather was attached, to the forehead of a patient. When the patient was left alone, the feather was in a state of unceasing agitation; but when the movements of the upper limbs were arrested in some way, as by forcibly elevating the arms and trunk, the feather was perfectly still. This experiment was tried with the same results on several patients.

3. M. Charcot laid particular stress on the fact that tremor is not a necessary symptom of Parkinson's disease. There is a form of the disease in which the tremor is so slight that it is not perceived by the patient, or in which it does not appear till after three or four years, or in which it is even entirely absent. M. Charcot gave in detail the histories of two cases in which all the symptoms of the affection were present, and had attained considerable intensity, with the exception of the tremor. This was entirely absent in one of the cases, and in the other was confined to a slight trembling of the left hand, of which the patient himself was entirely unaware. Even this slight tremor was of recent development, while the other symptoms of the disease had existed for four years.

In some cases, in consequence of the stiff attitude of the patients, of the extreme slowness of the movements, the expressions of hebetude, caused by the immobility of the features, the involuntary flow of saliva, and the interference with speech, the affection has been mistaken for softening of the brain. Usually, when this error has been made, the rigidity was especially marked on one side. The intellectual faculties, however, remain intact in Parkinson's disease.

DESROS ON RHEUMATISMAL INSANITY.—The following case was recently brought before the *Société Médicale des Hôpitaux* of Paris by M. Desros (*Journal de Médecine et de Chirurgie pratiques*, February 1877). A woman, aged 32, who had had two attacks of rheumatism, was admitted into the hospital for a third attack, which had lasted three months. After many fluctuations, this last attack, complicated by a cardiac lesion with phenomena of asystole, was especially marked in its course at the moment when the articular symptoms began to amend, by paralytic symptoms, consisting in a loss of power of motion of the limbs on the right side, accompanied with difficulty in the articulation of words, but with integrity of intellectual functions.

This paralysis, due either to embolism, hæmorrhage, or even to some congestion, or some cerebral ischæmia, had completely disappeared, when there occurred an "explosion" of psychical phenomena. They consisted at first in generalised delirium, somewhat incoherent, probably accompanied by hallucinations, with excessive agitation, presenting in a word the character of acute mania; then a calmer state supervened, when the delirium became marked by a tendency to ideas of persecution, accompanied by hallucinations, deep sadness, oppression, and at the same time refusal of food. During this time the articular symptoms had gradually diminished. Little by little also the psychical trouble disappeared.

M. Desros has sought to give some nosological significance to this fact; according to him, we must not refer it to the lesion of the encephalon which had

caused the paralytic complications. We must therefore attribute directly to that profound modification of the organism, whatever it be, which constitutes rheumatism, the disturbance of the understanding which was observed. By eliminating again cerebral hyperpyretic rheumatism, of which the patient did not present the etiological conditions, since her temperature was relatively little raised, it remains only to admit the existence of a rheumatismal insanity, properly so called. M. Desros insists on the importance of establishing an exact diagnosis, for if it were caused by cerebral rheumatism, due to super-elevation of temperature, the use of cold baths would be indicated, whilst in rheumatismal aberration, simple expectation, with some adjuvant remedies, should constitute all the treatment.

W. DOUGLAS HEMMING.

VOISIN ON SPASMODIC ILEUS IN HYSTERIA.—At a recent meeting of the *Société de Médecine* (*Gazette Médicale de Paris*, December 16, 1876), M. Auguste Voisin reported the case of a young hysterical girl, who had had three attacks of spasmodic contraction of the intestines, giving rise to the same symptoms as strangulation from an organic cause. The two first attacks were relieved by antispasmodics and purgatives, but the third one proved fatal. The necropsy revealed traces of a purely spasmodic stricture of the intestine. M. Voisin also related the history of a woman, who suffered from analogous symptoms, but in whom, with the exception of a certain impressionability, no trace of hysteria or of any other disease could be discovered. She complained chiefly of tympanites, which had become so extreme that it interfered a good deal with respiration; at the same time there were constipation and obstinate vomiting. This condition had lasted for several days, and was becoming more and more aggravated. The absence of any affection that could cause a mechanical or organic stricture of the intestine, led M. Voisin to suspect the existence of a simple spasm. He introduced an œsophageal catheter into the rectum, and discovered, some distance up, a stricture that he succeeded in passing; a large quantity of perfectly inodorous gas at once escaped through the catheter. This catheterisation was repeated several days in succession, and the patient was completely cured.

BLAKE ON CHRONIC INTESTINAL OBSTRUCTION: RELIEF BY THE USE OF THE ASPIRATOR.—Dr. John G. Blake reports, in the *Boston Medical and Surgical Journal*, November 23, 1876, the case of a man who was suddenly attacked by total obstruction of the bowels, without pain or fever, lasting eighteen weeks, and finally resulting in death, probably from starvation.

During the course of the affection, much relief was gained, and the patient's life undoubtedly prolonged, by the use of the aspirator to remove accumulated flatus. This was used at first every few days, later several times every day, the patient himself learning to insert the tube, and some member of the family performing the operation of pumping. The tube used was one-third of a millimetre (0.0117 inch) in diameter.

OTTO ON ALBUMINURIA AS A SYMPTOM OF AN EPILEPTIC ATTACK.—In a paper published in Vol. 59 of *Virchow's Archiv*, Dr. Huppert maintained that a transitory albuminuria occurs after every epileptic fit, whether typical or abortive. Dr. Kauer,

on the other hand, examined the urine in twelve cases with more exact tests, and his results were entirely negative. In the hope of settling this disputed point, Dr. Otto of Pforzheim (*Berliner Klin. Wochenschrift*, October 16) examined the urine after thirty-one epileptic fits, and concluded that a transitory albuminuria often, but not always, follows the attack. He examined the urine drawn immediately after the attack, and also that drawn two hours later. His tests were heat, nitric acid, and ferrocyanide of potassium. In the urine drawn immediately after the attack, albumen was found six times, in greater or less abundance; in the urine drawn two hours later, it was found twenty-two times; in the urine drawn a third time, at a later period, no albumen was ever found. These thirty-one attacks occurred in twelve patients, and the twenty-two attacks which were followed by albuminuria occurred in seven patients. Sometimes in the same patient, albuminuria would occur after one attack, but not after another. Dr. Otto never found albuminuria after an abortive epileptic fit.

This albuminuria is undoubtedly due to the disturbance in the circulation and the blood-pressure during the attack, and consequently its duration cannot exceed that of the attack itself. The urine drawn immediately after the attack is seldom albuminous, because the urine excreted by the kidneys during the attack, which would alone contain the albumen, has not yet reached the bladder. The albuminuria is consequently of no practical importance.

### RECENT PAPERS.

- On Diabetes. By M. Labbé. (*Le Mouvement Médical*, February 10.)  
 Cases of Diphtheria observed in the Sainte Eugénie Hospital during 1876. By Dr. Brochin. (*Gazette des Hôpitaux*, February 10.)  
 On acute Traumatic Splenitis. By M. Paul Mathon. (*Le Mouvement Médical*, February 3.)  
 On the Value of the figured Elements of the Urine in Parenchymatous Nephritis. By M. Hardy. (*Gazette des Hôpitaux*, February 6.)  
 On Dilatation of the Stomach, and its treatment by the stomach-pump. By M. Bucquoy. (*La France Médicale*, February 7 and 9.)  
 On Jerking Respiration Sounds and Extracardiac Murmurs. By Dr. Potain. (*Revue Mensuelle de Médecine et de Chirurgie*, February 1877.)  
 Contribution to the Study of the Head-symptoms of Tabes Dorsalis; Symptoms in connection with the Auditory Nerve. By Dr. A. Pierret. (*Ibid.*)  
 Unusual persistence of Thoracic Vibrations in a case of Pleuritic Effusion in consequence of Old Adhesions. By M. Lépine. (*Gazette Médicale de Paris*, February 17.)  
 Treatment of Scrofula. By Dr. Ory. (*La France Médicale*, February 21.)  
 On Intravenous Coagulations in the course of Typhoid Fever. By M. Dumontpallier. (*Gazette Médicale de Paris*, February 21.)  
 A Few Words on Apoplexy. By Dr. Metzquer. (*La France Médicale*, February 21.)  
 On Deafness as an Indication of Bright's Disease. By M. Dieulafoy. (*La France Médicale*, February 24.)  
 On Zona, Purpura Hæmorrhagica, and complicated Malarious Typhoid. By Dr. V. Grainpetro. (*Archivio Medico Italiano dei Medici Condotti*, January 1877.)  
 On the Different Results observed in the Treatment of Diphtheria; Account of an Epidemic. By Dr. P. Merlini. (*Ibid.*)  
 On the Causes of Epidemic Gastro-enteritis in Capoliveri (Elba) in 1870. By Dr. V. D'Arpe. (*Ibid.*)  
 A Case of Pernicious Anæmia. By Dr. Rosenstein. (*Berliner Klinische Wochenschrift*, February 26.)  
 On Apoplexy Retinæ in Pernicious Anæmia. By Dr. A. Nykamp. (*Ibid.*)  
 On a singular Case of Catalepsy in a Man. By Dr. C. Fedeli. (*Commentario Clinico di Pisa*, No. 1, 1877.)  
 Syphilis in the Production of Phthisis. By Dr. V. F. Colomiatti. (*Giornale della R. Accademia di Medicina di Torino*, February 10.)  
 A Rare Case of Lesion of the Heart and Aorta. By Dr. Alvarenga. (*Gazeta Medica de Lisboa*, January 13 and 20.)  
 A Contribution to the Statistics of Pneumonia. By Dr. O. Bang. (*Hospitals-Tidende*, February 21.)  
 Studies of Acute Articular Rheumatism. By Dr. C. Lange. (*Hospitals-Tidende*, January 31.)  
 On a Case of Diabetes. By Dr. P. Casciani. (*Lo Sperimentale*, February.)  
 On Diphtheria. By Dr. Luzinsky. (*Allgemeine Wiener Medizin. Zeitung*, February 27.)  
 On Intestinal Hæmorrhages in Enteric Fever and their Treatment by

- Cold Water. By Dr. Goldtdammer. (*Berliner Klinische Wochenschrift*, February 19.)  
 On Epidemics of Jaundice. By Dr. Köhnhorn. (*Berliner Klin. Wochenschrift*, February 12 and 19.)  
 On Thoracocentesis. By Dr. P. Walter. (*Erztliches Intelligenz-Blatt*, February 27.)

### DISEASES OF CHILDREN.

ARCHAMBAULT ON THE ALIMENTATION OF NEW-BORN CHILDREN.—In the *Journal de Médecine et de Chirurgie Pratiques*, for Jan. 1877, is an account of some remarks by Dr. Archambault, in his clinique at the Children's Hospital, on the above subject. After having condemned artificial suckling, while making restrictions relative to the precautions to be taken for this alimentation, and above all, with respect to the place where it is produced, town or country, M. Archambault thinks that mixed suckling may in certain cases be of great use. In fact we may allow that, save exceptionally, every woman has a sufficient quantity of milk, and is sufficiently vigorous to nourish her infant up to the age of three months. After that age, we may come to the aid of the woman by accustoming the child to take the bottle. We begin this in the night, which has the advantage of allowing the mother to rest and to bring herself into the best conditions for lactation. By this proceeding, even a very delicate woman may nourish her child; and although we may fear in general that the infant may refuse the bottle, it will often happen, on the contrary, that he will prefer it to the breast of the mother.

The milk should naturally, in order to obtain good results, be as good as possible; but when we cannot procure it under these conditions, we have a real resource either in the Swiss condensed milk or Nestlé's milk-food, which is well borne by infants.

Save in exceptional cases, milk should be the sole food for six months; it is from that age that we can introduce other substances into the food. Trousseau said that a good nurse should suffice for an infant for twelve months; but if this opinion be true, it must not less be recognised that in the majority of cases it is advantageous to modify the nourishment earlier, and besides, that children will take more kindly to this new food at six months than at twelve. At this time, then, we should begin the employment of light farinaceous foods.

The flour of barley and oats, bread, biscuit, &c., are substances almost equally good, but for their preparation much care is required; they should be boiled for a long time, then there should be added to them a little butter if the preparation be made with water; very little sugar should be put in on account of the easy production of acidity, and then a little phosphate of lime or chloride of sodium may be added. The food must be almost liquid. According to M. Archambault, bread or biscuit boiled and forming a kind of jelly is the best preparation.

The quantity to be taken in a day is of great importance, because it is often on account of an excess at first that the food is not tolerated. We should commence by giving five or six teaspoonfuls once a day at first, then gradually more often. A good plan is to scrape some chocolate on the boiled food; a food is thus obtained which the child is very fond of. At twelve months it may be able to take three portions in a day. These substances should be kept to as much as possible, though this is not easy, on account of the ambition of the mother to make the



child take soup. At the end of a year she will want to make it take wine and eat meat.

[The desire of the mother to give the infant *wine* would not obtain in England, though it is not improbable that a "drop of gin" or some other alcoholic stimulant will be considered necessary "to warm its little stomach."—*Rep.*]

If we allow soup, it must be completely deprived of fat, and without vegetables. As for wine, which is recommended by some physicians, it is bad; first, because it predisposes to dyspepsia, then because children no longer care for milk, the taste of which they find too insipid. We must, then, oppose this desire, at least until the six front teeth are through.

W. DOUGLAS HEMMING.

CANDERNA ON THE TREATMENT OF ACUTE INTESTINAL CATARRH IN INFANTS AND SUCKLINGS.—The author remarks (*Med.-Chir. Centralblatt*, No. 51, 1876), that the common cause of this affection is injudicious or excessive feeding. The first indication, therefore, is to get rid of the offending matter. For this purpose, castor-oil, mixed or not with aqueous extract of rhubarb, is the best. The excessive peristaltic action of the intestines is diminished by the application of an opiate poultice. The second indication, the removal of the catarrh set up by the irritating substance, is best accomplished with aqua laurocerasi, given alternately with minute doses of calomel every two hours.

RALPH W. LEFTWICH, M.D.

## SURGERY.

WATSON ON FEMORAL ANEURISM TREATED BY PLUGGING THE SAC.—In this case (reported by Dr. B. A. Watson, in the *American Journal of Medical Sciences* for October 1876), a man, aged 32, was admitted into hospital for a femoral aneurism on the right side, attributed to an injury received 14 years before, and which had remained in a quiescent condition and unnoticed, about the size of a walnut, for at least ten years, having been observed about two years after the injury. It had been increasing during the last two years, and on his admission was on the point of bursting, and actually burst two days afterwards. Assistance was promptly at hand, and the hæmorrhage was restrained by compressing the aorta and plugging the opening. On Dr. Watson's arrival, he emptied the whole sac of the coagula, and then introduced a plug of lint saturated with liq. ferri. subsulph. into the opening of the external iliac artery, and then firmly packed the whole sac, using nearly one quart of the solution and three yards of lint. The pressure was then removed from the aorta. This was done on May 28. Things went on pretty well, the plug gradually loosened, but no bleeding occurred till June 12. Meanwhile, a very forcible and tumultuous pulsation had been observed in the abdominal aorta, which seems not to have existed before. Attempts were made to repress the hæmorrhage, but in vain, and he died of bleeding on June 15. *Post-mortem* examination showed a fusiform aneurism of the abdominal aorta, extending below its bifurcation down the left common iliac. The right external iliac, from its origin to the opening into the sac, was entirely occluded by "a firm thrombus," and the femoral was filled by a similar clot as far as the origin of the profunda. The deep epigastric was

much enlarged, and opened into the external and lower part of the aneurism, and it was this artery which, in Dr. Watson's judgment, had furnished the bleeding; the circumflexa ilii and the branches of the common femoral were also much enlarged, but their anastomosis could not be traced.

Dr. Watson first discusses the general question of treating aneurism by plugging the sac, citing passages from Lisfranc, Pirrie, Erichsen, and Velpeau, to show that this proceeding has been enumerated among the resources of surgery for the treatment of aneurism. None of these authorities, however, in the least favour its employment, nor, indeed, would any sane surgeon recommend such a measure, unless in most exceptional circumstances. In the present instance, the disease had probably been neglected till it was incurable. The aneurism of the aorta was due, as Dr. Watson believes, to the contusion of that vessel by the compression kept up while the sac was stuffed; and the details of the case favour this view. If so, the condition of the vessels must have been one of extensive disease, and it is much to be regretted that Dr. Watson has omitted all accurate description of the state of the arterial walls. The operation which would naturally have suggested itself to the surgeon dealing with a ruptured aneurism in which, after the removal of the clot, he could distinctly see the opening of the external iliac artery, would evidently have been to put a ligature round that vessel; and it is surprising to find the author, in discussing the treatment of the case, pass over that measure with the following most unsatisfactory reference. "The attempt at ligation, after opening the sac, appeared not less formidable than ligating the aorta, since it was impossible, prior to the autopsy, to know that the arteries covered by the tumour were not involved in it."

[Surely Mr. Syme's cases and teaching on this head are sufficiently well known, and any surgeon might have anticipated (what ten minutes' dissection would have proved), that the external iliac artery could in this case have been easily separated from the sac, and tied above and below the aneurism, and thus the patient have been placed in a much more secure position, and with far less chance of secondary hæmorrhage than by any plug. It is highly probable that, if the sac had been freely incised and left without the irritation of the plug, the epigastric artery would not have bled, though the description is hardly full enough to enable us to judge what was really the cause of the hæmorrhage from this vessel.]

[The chief value of Dr. Watson's case seems to be as showing that, in cases where the ligature cannot be used, plugging the vessel may lead to its obliteration, and in that sense the case is no doubt worthy of record; and Dr. Watson's suggestion should be borne in mind, that the plug should be firmly inserted into the mouth of the artery, a measure which may very likely supersede the necessity for any further plugging. But there is nothing, as far as we can see, in this case to show that the old practice of dissecting out the vessel and tying it ought not to be preferred in all ordinary cases of ruptured aneurism.—*Rep.*]

MASON ON A CASE OF SARCOMATOUS TUMOUR MISTAKEN FOR POPLITEAL ANEURISM.—The number of the *American Journal of Medical Sciences* for January 1877, adds another to the many cases on record in which a pulsating malignant tumour has been mistaken for an aneurism. In the present instance (related by Dr. Mason of the Bellevue Hos-

pital), as in one recorded by the present writer in the 7th volume of the *St. George's Hospital Reports*, the popliteal space was the seat of the tumour. The spine or pelvic bones have more usually been the part from which the disease has originated. The chief feature of interest in Dr. Mason's case is that both bruit and eccentric pulsation were observed, so that no doubt was entertained of the aneurismal nature of the tumour. It is more usual for the symptoms to be somewhat anomalous; and a careful examination will generally induce the surgeon to hesitate, even though he may ultimately think it better to treat the case as aneurism. In the instance before us, Dr. Mason does not endeavour to account for the eccentric character of the pulsation, nor does the description and drawing of the tumour which he appends supply the explanation. The case was treated by pressure, and then by ligature of the femoral, which suppressed the pulsation; but afterwards, as the tumour made its appearance on the front of the thigh, and the patient's health began to give way, the mistake became apparent, and amputation was performed. The patient died about a month after the operation from "phthisis" it is said, but no *post mortem* examination of the lungs is recorded. Possibly the malignant growth might have been reproduced in the lung.

[This case adds another to the many proofs that the diagnosis of aneurism may be mistaken, even after careful examination, by very competent surgeons; and this, we believe, has never been denied—certainly not by the present writer. The danger is, lest such cases should be used to justify mistakes proceeding from haste and negligence; and there can be little doubt that, for one mistake which has been made after due examination, ten at least have been made for want of such examination.—*Rep.*]

T. HOLMES.

**BUROW ON OSTEOPLASTIC RESECTION OF THE SUPERIOR MAXILLA.**—The *Berliner Klinische Wochenschrift* of January 29th contains a contribution from Dr. Burow, of Königsberg, on the operative treatment of naso-pharyngeal fibroma. The author reports at some length a case of a man, aged nineteen years, from whom a large recurrent of this kind was at last wholly removed by Von Langenbeck's osteoplastic operation. Division of bone was made, first from the surface of the malar bone to the speno-maxillary fissure, and afterwards through the ascending process of the palate bone, and through the body of the lower jaw, above the hard palate. In each of these sections a chain-saw was used. The portion of the upper jaw thus partially detached was, together with the undisturbed soft parts on its anterior surface, elevated and turned inwards and upwards, so as to lay open from the front the pterygo-maxillary fossa, and to expose the tumour. In the first stage of this operation two incisions were made in the skin, one commencing below the inner canthus, and extending along the lower margin of the orbit to the malar extremity of the zygomatic arch, the other reaching across the cheek from the nasal orifice to the outer extremity of the first cut. The patient made a rapid and complete recovery, with but slight traces on his face of the incisions made in the operation. In this case, Von Langenbeck's operation was slightly modified with regard to the use of a chain-saw instead of a straight narrow saw. The author, in commenting on this case, argues that, of the several operative methods that have been practised in the radical treatment of naso-pharyngeal polypus, the method

devised and practised by Von Langenbeck is the best. He does not deny, however, that in desperate cases, and especially when the tumour has been growing for a long time, it is necessary to sacrifice the whole of the maxilla in order to gain free access to the fixed parts of the growth, and there can be no doubt, it is granted, that total ablation of the upper jaw is a far less difficult operation than osteo-plastic resection. In the treatment of most cases of naso-pharyngeal polypus, since simple incision is not sufficient for a radical cure, the surgeon has to decide between total removal of the upper jaw and one of the different operations for so-called osteo-plastic resection. In Huguier's operation, one of the latter class of proceedings, that portion of the upper jaw which Von Langenbeck leaves *in situ* is rendered movable, namely, the hard palate with the alveolar process and the floor of the antrum. Moreover, less of the seat of the disease is exposed in the former operation. It has been reported that reunion does not take place so readily in the French operation. In one of Huguier's cases brought under the notice of the Paris Academy, there was, nine months after the date of the operation, free mobility of the portion of bone that had been elevated. Roux, in his operation, loosened the upper half of the superior maxilla in such a manner that this portion of bone, together with the superjacent soft parts, would be elevated from within outwards. This method has no special advantages of its own, and does not expose so large a space as Von Langenbeck's operation, in which the upper part of the jaw bone is turned inwards. Dr. Burow holds that to Von Langenbeck, who performed his first osteoplastic resection in 1861, is due the credit of having, in the radical treatment of naso-pharyngeal polypus, substituted for total resection of the upper jaw a proceeding which entails no loss and no permanent damage to bone, and which enables the surgeon to reach the most deeply seated portions of the tumour.

In consequence of the abnormal expansion of the speno-maxillary fossa and of the pterygo-palatine foramen through pressure of the tumour, the difficulty in the application of the chain-saw is not so great, Dr. Burow states, as might be concluded from trials on the dead body.

Osteoplastic resection may be attended with serious hæmorrhage, as was proved in two cases reported, one by Esmarch, the other by Hill, in which notwithstanding every precaution having been taken, the patients died from this cause. Von Langenbeck describes the bleeding that may be expected in the course of this operation as very considerable. One surgeon was compelled to discontinue the operation on account of the profuse hæmorrhage caused through laceration of the naso-pharyngeal tumour by the saw. Dr. Burow believes that, if certain precautions be taken, the hæmorrhage attending the operation may be kept within moderate limits. He advises that in the early stages of the operation every bleeding vessel should be at once tied, and that during the open section of the bony parts, care should be taken to avoid touching with the saw the soft and vascular tumour. The author believes that the danger of hæmorrhage from the tumour is less likely to occur in the use of the chain-saw, than in that of the straight saw recommended by Von Langenbeck.

Verneuil lost a patient during osteoplastic resection through a flow of blood into the trachea. Dr. Burow recognises the danger of bleeding into the air-passages, but does not approve of tracheotomy and temporary plugging around the cannula. In the case



reported in the author's paper, the earlier steps of the operation, during which the flow of blood into the trachea can be readily prevented, were carried out whilst the patient was deeply under the influence of chloroform. Subsequently, as the pharyngeal cavity and the tumour were exposed, the anæsthetic was withheld, and the patient was allowed to recover to such a degree as to be able to reject blood from the back of the mouth.

**TILLMANN'S ON THE ACTION OF CARBONIC ACID ON BONE.**—In a paper by Dr. H. Tillmanns, of Leipsig, in a recent number of the *Deutsche Zeitschrift für Chirurgie*, Bd. vii, allusion is made at the commencement to some investigations by Fleisch proving that carbonic acid, after prolonged contact with dead bone, causes dissolution of all the elements, organic as well as inorganic, of the bone-tissue. In the dissolution of bone by the mineral acids, the calcareous elements only are dissolved, the protein elements being left intact. Dr. Tillmanns holds that to this action of carbonic acid is due the partial destruction of ivory pegs used in the treatment of pseudarthrosis, this destruction of the ivory being the result of removal both of its organic and inorganic constituents. Against the theory that the pressure of granulations causes this absorption of the ivory he argues that, though such pressure, and indeed pressure from any cause, may produce rapid removal of living bone, it does not, as has often been proved by experimentation, exert any action on bone that is living. The roughening of the surface of the ivory peg cannot be attributed to the action of any mineral acid, since this roughening and disintegration of the ivory structure is due to the removal of organic as well as earthy constituents. Some authors attribute the breaking down of the ivory to the action of lactic acid, but Dr. Tillmanns says that there is not sufficient of this substance in the human organism to effect such change. A description is given of some experiments made by the author, which show that ivory pegs, when submitted without the organism to the action of carbolic acid, at a temperature of 100 deg. Fahr., become roughened on their surfaces through the dissolution and removal of both organic and inorganic elements. Dr. Tillmanns holds that the carbonic acid causing the partial removal of ivory pegs used in cases of pseudarthrosis, is given off by the blood. In the course of such treatment, the conditions for the giving off of carbonic acid are very favourable. The whole of the false joint, in consequence of the presence of the foreign bodies, is in an inflammatory condition, and very active processes of nutrition and tissue-change are carried on in the richly cellular and vascular structures about the seat of the lesion. Why a sequestrum is so seldom roughened or changed in any way during a more or less prolonged sojourn in the organism is due to the fact, Dr. Tillmanns considers, that the portion of necrosed bone is removed from the contact of living tissues, and generally surrounded by pus, so that the direct action of carbonic acid is prevented.

W. JOHNSON SMITH.

**POZZI ON LISTER'S ANTISEPTIC METHOD AS APPLIED TO AMPUTATIONS AND THE REMOVAL OF TUMOURS.**—Dr. Pozzi (*Progrès Médical*, 1876) says that, after a visit to Edinburgh, though convinced that there was undoubtedly something very important in Lister's antiseptic treatment, he thought that it included several unnecessary details which might with advantage be dispensed with. To test this

belief, and if possible to determine what was, and what was not, absolutely necessary, he took advantage of the three months during which he had charge of Professor Broca's wards in Paris.

The author at first intended to leave off one by one the different appliances used by Mr. Lister; but on account of the limited time at his disposal, he from the first omitted what appeared to him the most inconvenient and least important. Hence he performed his operations without the use of the spray, and instead of the antiseptic gauze used carbolised cotton-wool or charpie, and afterwards permeable carbolised cotton-wool, which combines the qualities of carbolised cotton-wool and charpie. Further, instead of protective, he used Hamilton's goldbeater's leaf; for the Macintosh, ordinary oiled-silk; and kept the pads and dressings in their position by ordinary bandages.

During the operations, everything recommended by Mr. Lister was, with the exception of the spray, carefully attended to, and the wounded surfaces were kept in apposition by the use of superficial and deep sutures, this being considered by the author to be of very great importance.

The following is a list of the cases and the results.

1. Removal of lymphadenoma of the neck; almost complete union by first intention.
2. Amputation of the leg at the seat of election for caries of the tarsal bones; union by first intention.
3. Excision of a triangular piece of the lower jaw in front of the masseter for ankylosis of the temporomaxillary articulation; union by first intention.
4. Removal of a large sarcomatous breast; almost complete primary union, notwithstanding a sharp attack of erysipelas.
5. Removal of the left labium for sarcoma; primary union of deep part of the wound.
6. Disarticulation of the last phalanx of the right index finger; union by first intention.
7. Disarticulation of the thumb, with removal of the head of its metacarpal bone; union by first intention.

The author does not consider the above cases of sufficient importance or sufficiently numerous to lead to any very definite conclusions: but he ventures to think that the results obtained by the modified antiseptic treatment above mentioned are as satisfactory as could have been obtained by Lister's method when carried out to its full extent. The author further believes that the advantages obtained by Lister's method when used for such cases as those above mentioned, are the result of, (1) The methodical bringing together of the wounds by superficial and deep silver wire sutures; (2) The use of drainage-tubes; (3) Of much less importance, the protection from the atmospheric influences, which may be secured by light porous dressings; (4) The application of antiseptic lotions; (5) The use of carbolised catgut ligatures, instead of the ordinary irritating catgut; (6) The employment of readily permeable dressings which prevent the accumulation of irritating fluids on the surface of the wound. J. C. EWART, M.B.

**POINSOT AND MAURIAC ON TRACHEOTOMY WITH THERMO-CAUTERY.**—MM. Poinso and Mauriac, two surgeons, have successfully employed the thermocautery of Paquelin in the performance of tracheotomy (*Gazette Médicale de Bordeaux*, September 20, 1876). The platinum knife of the thermo-cautery is heated to a dull red, and the three following stages of operation are followed. 1. The skin and superficial cer-

vical fascia are incised slowly from above downwards and with one stroke in the median line of the neck, immediately below the border of the cricoid cartilage. 2. The knife is carried again to the upper part of the incision, and the intermuscular tissue is divided slowly, and with a single stroke, down to the trachea. 3. The point of the knife is carried a third time to the superior extremity of the wound, and plunged perpendicularly in, until the sensation of a resistance overcome is felt. The characteristic hissing of the entering of air is then produced. As soon as the point has penetrated the trachea, the incision must be rapidly enlarged, and the knife withdrawn.

This last stage of the operation requires to be executed with a certain promptitude; for, by leaving too long the blade heated to the point of dull redness in the trachea, there is some danger of cauterising the lateral and posterior walls, although the radiating power of the platinum is very slight. These three stages of the operation may be executed in less than a minute. It is well, before incising the trachea, to fix the larynx of the patient between the thumb and the index finger of the left hand whilst pressing upon the deep parts; but there is no necessity for denuding and puncturing this tube with an ordinary bistoury, and thus inducing danger of hæmorrhage.

This operation, which may be accomplished with a certain rapidity, is not accompanied by any bleeding, and may be easily performed by a surgeon alone, without any other assistance than that of those who keep the child steady.

VON WYSS ON THE HEALING OF WOUNDS OF THE SKIN.—Dr. Hans Von Wyss (*Virchow's Archiv.* Jan. 1877) describes anew the healing process of superficial incised wounds of the skin. He concludes that—

1. The substance which unites the cut edges of a not penetrating wound of the skin on the first day, consists only of newly formed epithelium.

2. In penetrating wounds of the skin, the newly formed epithelium fills at least two-thirds of its depth.

3. The cell-elements of the true skin do not take part during the first days in the healing process.

4. Inflammation of the skin does not occur after a simple incised wound; it is only the result of accidental irritation, and hinders the proper healing process.

ROBERT SAUNDBY, M.B.

NEWMAN ON AMPUTATION OF THE HIP-JOINT.—Mr. Newman (*Glasgow Medical Journal*, Oct. 1876), describes a new method of amputating at the hip-joint, which is specially intended, by bringing pressure to bear on the base of the flaps, to diminish the amount of hæmorrhage, and render the abdominal tourniquet and other appliances unnecessary.

The knife used consists of a blade twelve-and-a-half inches in length and one inch broad, with two movable steel slips nine inches long, two-fifths of an inch broad, and one-tenth of an inch thick, fitted into the back of the blade. These slips are kept in their place by two steel snibs fixed in the handle, and the slips fit so accurately, that they in no way interfere with the knife when cutting. To the handle end of each slip an elastic band is attached, and each band has a hook at its free end, which can at any moment be fastened to a pin stretching across an oblong space at the other end of each slip.

The operation is conducted as follows. As much blood as possible having been pressed out of the limb, and the patient anaesthetised and fixed in the

usual position, an assistant adducts and slightly extends the thigh of the limb to be removed—say the right—and the surgeon, standing on the left side, inserts the knife a little in front of the tuberosity of the ischium, passing it outwards posterior to the neck of the femur, bringing it out an inch behind the line between the anterior superior spine and the trochanter major. In order to allow the knife to pass in this direction, the limb is rotated inwards as soon as the point of the knife comes into contact with the neck of the femur. The posterior slip is now disengaged, and the knife is withdrawn far enough to allow the point to be passed in front of the neck of the femur; and, by abducting and rotating the limb outwards, the point of the knife is made to pass through the wound already made between the spinous process and the great trochanter.

The elastic bands are now stretched and hooked, and the other slip is disengaged from the side of the knife. The knife is now carried downwards to form the anterior flap, the thigh is extended, abducted, and rotated outwards, and the joint is opened by cutting on the head of the bone in front, which, on depressing the femur, starts forwards and enables the surgeon to cut through the round ligament and the rest of the capsule, and carry his knife round the head of the bone to form the posterior flap.

The flaps thus formed are so firmly compressed at their base, between the slips and elastic bands, that there is no danger of hæmorrhage.

The surgeon now secures the femoral artery, and the vessels of the anterior and posterior flaps; and then, on removing the elastic bands from the anterior and afterwards the posterior flap, the operation is completed.

Removal of the left limb would be conducted in much the same way, but the surgeon would enter his knife between the anterior superior spinous process and the great trochanter, and bring it out in front of the tuber ischii.

JACQUEY ON PHLEGMONOUS INFLAMMATIONS OF THE CAROTID REGION AND THEIR TREATMENT.—M. Jacquy (*Thèse de Paris*, 1876) remarks that phlegmon of the neck is an especially grave affection, in consequence of the numerous complications to which it has been observed to give rise.

Sudden death may occur, either from embolism of the pulmonary artery or from cerebral embolism. As the majority of the complications come from the strangulation of the tissues produced by inflammation, from the compression of the vessels, which results from the strangulation, and finally, from the difficulty which the fasciæ oppose to the issue of pus to the surface, it is desirable to give early vent to the pus, and to divide the tissues externally. In this way one will have the opportunity of avoiding vascular disturbances and the diffuse suppuration, which are so grave for the patient.

#### RECENT PAPERS.

- Spontaneous Fracture of Vesical Calculi. By Dr. Boulonné. (*L'Union Médicale*, February 13.)  
 Cure of Strumous Ulcer of the Leg by Unguentum Hydrargyri Compositum. By M. Panas. (*La France Médicale*, February 17.)  
 On Mild Ulcerations of the Genital Organs. By Dr. Mauriac. (*Gazette des Hôpitaux*, February 20.)  
 On Pharyngo-Nasal Sphyllography. By Dr. C. Mauriac. (*L'Union Médicale*, February 24.)  
 Large Calculus Removed by Cysto-Vaginal Section. By Dr. Bini. (*Lo Sperimentale*, February.)  
 On Parenchymatous Inflammation of the Tongue. By Dr. Sidlo. (*Allgemeine Wiener Med. Zeitung*, Nos. 8 and 9.)  
 On Dislocation of the Vertebrae. By Dr. E. Küster. (*Deutsche Medicin. Wochenschrift*, Nos. 8 and 9, 1877.)



On the Local Treatment of Chronic Catarrh of the Bladder. By Dr. M. Schüller. (*Deutsche Medicin. Wochenschrift*, February 24.)  
 On the Treatment of Wounds. By Dr. Dumreicher. (*Wiener Medizinische Wochenschrift*, February 10, 17, 24.)  
 On the Operative Treatment of Varix of the Leg. By Dr. M. Schede. (*Berliner Klin. Wochenschrift*, Feb. 12.)  
 On Malformation of the Foot and general troubles determined by Foot-coverings with high and narrow heels. By Dr. J. Onimus. (*L'Union Médicale*, February 13.)  
 On the Excision of the Epiphyseal Cartilages to arrest the growth of Bones, and to remedy certain Malformations. By M. Ollier. (*Revue Mensuelle de Médecine et de Chirurgie*, February 1877.)  
 On Ligature of the Popliteal Artery in Elephantiasis of the Leg. By Dr. Cusati. (*L'Union Médicale*, February 15.)  
 Dressing of Amputation-Wounds. By Dr. Azam. (*Le Progrès Médical*, February 24.)

## MATERIA MEDICA AND THERAPEUTICS.

FINNY ON THE TREATMENT OF CHOREA.—Dr. J. M. Finny publishes in the *Dublin Journal of Medical Science* for Jan. 1877, the following cases of chorea treated by the ether-spray and strychnia.

1. A boy, aged 13, had no rheumatism; no anæmia; no cardiac affection. The case was severe. He had been ill a fortnight, and had been treated with succus conii and shower baths. Treatment was begun with one-sixtieth of a grain of sulphate of strychnia three times a day, and the dose was increased gradually to one-seventeenth of a grain, without any physiological effect except increasing the appetite. The application of ether-spray down the spine appeared to relieve the spasms. He recovered in fifteen days.

2. A girl, aged 11, had been ill about a fortnight. The case was severe. She had no rheumatism or heart disease; no anæmia. Ether-spray here also produced an immediate temporary sedative effect. Sulphate of strychnia was given as before, beginning with one-sixtieth of a grain; when taking one-seventeenth of a grain she showed signs of opisthotonos, with stiffness and pain in the limbs. The medicine was then omitted. Again given, it produced the same symptoms at one-fifteenth of a grain, when it was finally reduced to one-twentieth. The symptoms improved from the fourth day of treatment, and had completely disappeared after twenty-five days.

3. A boy, aged 9, had been ill a fortnight. The movements were most on the right side. He had no rheumatism nor cardiac disease. Several round worms had been expelled before and during his stay in hospital by santonin, but without apparent effect on the malady. Ether-spray was applied from the nape to the sacrum from five to ten minutes every other day, and a draught was given at night, containing ten grains each of bromide of potassium and chloral hydrate, with twenty minims of tincture of hyoscyamus. After ten days of this treatment he was better, but not cured. Strychnia was then given, but the boy's mother took him home before the cure was completed.

4. A girl, aged 15, was ill with her second attack. The first was three years ago, following a severe fright. She was then not expected to live from the violence of the movements and the emaciation which ensued. After nine months' illness she revived, but had slight relapses, which culminated in a second severe attack. (There is no mention of rheumatism or cardiac disease.) Menstruation had not begun. Strychnia sulphate was given in doses of one-thirtieth of a grain thrice a day, with ether-spray three times applied. In a few days she was

much better, and after going into the country she recovered, with slight relapses. A year afterwards the menses had appeared and she was perfectly well.

While not pressing the force of these cases, or pretending that the treatment adopted is uniformly so successful, Dr. Finny thinks that they confirm the opinion of Trousseau and Hammond in favour of strychnia in the treatment of chorea.

P. H. PYE-SMITH, M.D.

BROWN ON THE TREATMENT OF RHEUMATISM BY SALICYLIC ACID AND SALICINE.—In the *Boston Medical and Surgical Journal* for February 8, Dr. C. W. Brown, late house-physician to the Boston City Hospital, gives a tabulated history of one hundred and nine cases of rheumatism treated with salicylic acid and salicine at that institution since February 1876. The cases represent all those of rheumatism which have entered the hospital since the date mentioned, except those of undoubted chronic character. Fifty-nine were males, fifty females; thirty-nine had outdoor occupations or those necessitating exposure; seventy, indoor or unexposed occupations: fifty-seven suffered from the first attack, thirty-two from the second, ten from the third, one each from the fourth and fifth, three from the seventh, three from "several," and two from "many" attacks.

In thirty-eight of the sixty-three cases observed which were treated with salicylic acid, the heart was normal throughout. In twenty-four the heart was affected at entrance. In two, the cardiac disease disappeared while in the hospital. In three cases, the heart became affected after entrance. In one of these, the heart was not affected until after the relapse, but the murmur became well pronounced before discharge. Another of these three patients had complained of pain over the præcordia, and had a rapid and weak heart, with dyspnoea, from the time of entrance, but no abnormal sound was detected until the eleventh day. In the third case, pericarditis appeared after the rheumatic symptoms had wholly disappeared, although the right hand became affected again four days later. The necropsy showed the endocarditis present upon entrance to have been of recent date.

It is fair to assume that the heart was normal in a very large proportion of the cases in which its condition was not recorded. But upon the basis of sixty-three cases, the heart became affected after entrance in only 4.76 per cent., while under the alkaline treatment, in the series of cases reported by Dr. J. G. Blake,  $13\frac{2}{3}$  per cent. developed heart affections after entrance.

The average time to relief, that is, to the hour when the symptoms were distinctly ameliorated, was 1.46 days, varying from three hours to four days. This is probably much too high, as in very few cases were more than ten to fifteen doses needed before marked benefit was experienced. The average time to complete cessation of pain was 2.85 days, varying from twelve hours to fifteen days.

The average amount of acid taken to produce relief was one hundred and fifty-four grains: the quantity varied from thirty to two hundred and ten grains. The amount required to produce complete relief from pain and mobility of the joints was 531.22 grains to each patient; to each attack, 343.73 grains. Deducting the three largest amounts taken, 880, 940, and 2,250 grains, the average to each patient was 400.84 grains. The average time during which the acid was taken by each patient was 6.22 days, varying from

one day to thirty-one days. The average time in hospital was eighteen days.

The acid produced no relief in three cases. In the first but five doses or fifty grains were given, which is ordinarily too small an amount to be of service. Another case was subacute, in a debilitated subject, a variety not so easily controlled by the acid as a more acute form, and the trouble was probably due more to debility than to a true rheumatic state. A third took but thirty grains a day, too small an amount to affect an acute case.

Two cases died, one from pericarditis and one from cerebral complications. Eighteen cases had one relapse, three had two, and one had five while in the hospital. There were very few cases in which there were not occasional pains for a time after the omission of the acid.

Nausea and vomiting were noted in twenty cases (in one case complicated by pregnancy), or in 18.8 per cent. Burning in the stomach occurred in one case. Headache was noted in six, ringing in the ears in nineteen, and deafness in ten cases; numbness and prickling of the affected parts were observed in three cases, in one extending to all parts of the body, and in another persisting for two days after omission of the acid.

Delirium occurred in three cases, one possibly being delirium tremens. Nearly all of the cases in which nervous symptoms were manifested were those of persons in poor physical condition.

Pneumonia occurred in three cases; iritis, synovitis, herpes labialis, purpura, uterine hæmorrhage, sore throat, and conjunctivitis, complicated one case each.

The universal result of the acid, when given in full doses, in acute cases, was to cause a fall of temperature, but never much below the normal point. The effect on the pulse and respiration was less marked, as they usually fell less rapidly. The pulse-rate often increased for a time in weak or debilitated subjects.

The patients were usually placed upon treatment by the house-physician soon after entrance, the common dose being ten grains every hour while awake, for twelve to thirty-six hours, when the symptoms were wholly or partially relieved. Then the practice varied, the acid being omitted altogether or reduced to ten grains every two or three hours for a time, to be again reduced and finally omitted in from ten days upward. Usually no opiates were given, and no attention was paid to the condition of the bowels. The acid was first taken in wafers, but it occasionally happened that an awkward patient would break one in his mouth and release the pungent acid, producing very unpleasant sensations and perhaps a refusal to take any more. A substitute was found, in the service of Dr. Blake, in pills made with honey or molasses, containing  $3\frac{1}{2}$  grains each, about the size of a compound cathartic pill. They were much more satisfactory, and have been almost exclusively used since. The various solvents, soda and ammonia salts, glycerine, etc., were but little used.

Dr. Brown says that the number of cases treated with salicine was too small to base any definite conclusion upon as regards its value when compared with salicylic acid or any other method of treatment. It certainly acts more slowly than the acid. It was used in six cases during part of the treatment, and in three during the whole. The dose varied from five to fifteen grains per hour, and was taken with no bad effect; in fact, those who took it throughout had excellent appetites and made a rapid and thorough

convalescence, instead of being left in a generally poor condition with no appetite, as was too often the case with those treated with salicylic acid. Of the six cases who did not take salicine continuously until recovery, four were relieved, and two were not relieved after taking it from two to four days. The three cases who took it throughout were acute, of moderate severity. The heart was normal in all. The average time to relief was  $2\frac{1}{2}$  days; to complete relief,  $6\frac{1}{2}$  days; the average amount taken was  $346\frac{3}{8}$  grains, ten grains every hour. The average time in hospital was  $13\frac{1}{2}$  days. There was relapse in one case. Because of its better general effect on the patient, salicine seems to merit a more extended trial.

BÄLZ ON THE VALUE OF SALICYLIC ACID IN DISEASE.—In the wards of Professor Wunderlich, in Leipsic, salicylic acid was administered in nearly two hundred cases during the years 1875 and 1876. From careful study of its action in this large number of cases Dr. Bälz, formerly first assistant at the Medical Clinic, has deduced the following conclusions (*Archiv der Heilkunde*, 1877). Salicylic acid deserves, as a rule, the preference over all other antipyretics, but it fails in certain cases, in which other remedies produce valuable results. Cold water and quinine still retain possession of their therapeutic domain, in which the new remedy cannot rival them. Apart from its antipyretic action, it increases the excretions from the skin and the kidneys, and may, in consequence of this power, prove useful in the treatment of some cases of dropsy. The unpleasant nervous symptoms, such as tinnitus aurium, deafness, delirium, and mania, which sometimes supervene during its employment, usually disappear spontaneously, and are not dangerous.

RENAULT AND THAON ON THE USE OF OPIUM IN TONIC MEDICATION.—Dr. Renault (*Thèse de Paris*, August 1876), following the teaching of Professor Gubler, and from cases studied in his wards, insists on the value which opium may have as a tonic medication, especially in persons habituated to its use. His conclusions are that opium is suitable in the forms of asthenic and anæmic cephalalgia, and in neuralgia of the same origin, but that it does not succeed in the hypersthenic and congestive forms, in which it is rather injurious than useful. He makes the same remark on the subject of the delirium which is observed in pneumonia, typhoid fever, erysipelas, etc., if this morbid system be due to ischæmia, and not to an inflammation of the meninges and of the cerebral substance.

In chlorosis and anæmia, the cerebral symptoms are advantageously combatted by small doses of opium, which besides re-animating the functions, give, so to speak, a stimulus to the organism. Opium will calm the pains of chronic maladies, will raise the exhausted strength, or at least, will put the organism in a state to oppose a longer resistance. The pulse is thread-like; the pupils are dilated; morphia is administered, and immediately the circulation is strengthened. Morphia, all agree, congests the brain; the congestion of the brain brings to an anæmic person just the quantity of blood indispensable to a regular fulfilment of functions. From that moment the cyanosis disappears, the pupil contracts, the pulse rises under the finger. This observation may be made in a consumptive patient and equally so in a convalescent, and in an individual anæmic from hæmorrhage.



M. Vibert has shewn the admirable results which may be accomplished by morphia. Morphia drives to the brain all that remains of blood in the individual. It acts like the elastic compression practised on the limbs and proposed by some for patients in child-bed who have lost their blood from hæmorrhage. Insanity itself may in certain cases be successfully treated by opium, but it must not be of the irritative kind; an opiate treatment will be so much the more indicated if there be symptoms of cerebral ischæmia.

M. Thaon insists also, for his part, on the tonic influence of morphia in patients with advanced consumption. He shews that in the latter there exists a deficiency of red corpuscles, which deprives the brain of its natural stimulant. The brain can no longer command the organs; the regulator of the machine is suppressed; consequently the functions suffer, and the consumptive patient becomes suffocated and cyanosed.

#### THAIN ON THE SIMPLE TREATMENT OF QUINSY.

—Leslie Thain (*Canadian Medical Journal*, 1876, p. 413), believes gargles of alum, tannic acid, and such similar astringents useless for the purpose of astringing the vessels sufficiently to "press back" the inflammation. His plan is to apply externally hot fomentations (with a few drops of turpentine) to the throat, and then to wrap up the whole neck in flannel. Constant heat, moisture, and mild counter-irritation are to be kept up by frequent changing of these applications. The feet must be at once put into a hot mustard-bath; and if the patient will then get into bed between blankets, so much the better.

Gargles as hot as can be borne must be begun as soon as possible, and the most useful is a solution of carbolic acid, one part to forty of water. If the patient cannot gargle, carbolic acid in glycerin (one to twenty or thirty) should be frequently applied by means of a feather to the parts. A brisk saline aperient may be advisable. By following this plan of treatment the inflammation subsides in a few hours, never running on to suppuration; and then a simple alum-gargle may be serviceable.

#### CHOPARD ON THE TREATMENT OF TETANUS

BY CHLORAL.—Dr. Chopard has collected in his work (*Thèse de Paris*, 11th August, 1876) 80 cases of tetanus, in which chloral alone or with other medicines has given good results. He rejects the employment of intravenous injections and of subcutaneous injections of chloral, and proposes the employment of chloral either by enema or by draught; the enemata are administered according to the method approved by Drs. Griffiths and Dujardin-Beaumetz; that is, by putting the solution of chloral into milk, to which the yolk of an egg has been added.

Dr. Chopard adopts the following conclusions.

1. The administration of chloral in tetanus is to be recommended. 2. Chloral in tetanus offers to the physician more than any other treatment the hope of saving his patient's life.

#### DAVIS ON THE MEDICINAL PROPERTIES OF THE

CENOTHERA BIENNIS.—Dr. N. S. Davis, of Chicago, recommends (*American Practitioner*, Jan. 1877) the use of this plant as a mild but efficient sedative in nervous affections, especially where the pneumogastric is involved, since it is useful in respiratory or gastric trouble, where there is a morbid sensitiveness in the laryngeal, pulmonary, or gastric branches of

that nerve. This plant, generally known as the evening primrose, is common in the Middle and Northern States. It may be used in the form of the infusion or fluid extract. One or two teaspoonfuls of the former may be given to adults; of the latter twenty or thirty minims may be repeated every three, four, or six hours.

#### BULKLEY ON AN ANTIPRURITIC REMEDY.—Dr.

L. D. Bulkley (*Transactions of the American Medical Association*, quoted in the *Richmond and Louisville Medical Journal*, December) says that more than a year ago he noticed in a medical journal a statement that equal parts of hydrate of chloral and camphor when rubbed well together are converted into a fluid substance. On testing the truth of this, he found after a few minutes' trituration in a mortar of powdered camphor with chloral, that in place of two crystalline substances a transparent colourless fluid existed, of the consistency of glycerine—no solvent having been added. It at once occurred to him that this would be of value in allaying itching, inasmuch as camphor acts oftentimes very gratefully when locally applied for this purpose, while he has long employed chloral internally to the same end. He therefore had some ointment prepared after this formula:

R—Pulv. gummi camphoræ; chloral-hydrat.,  $\text{āā}$   $\text{ʒj}$ .; ung. aquæ rosæ  $\text{ʒj}$ . M.

Rub the chloral and camphor carefully together till fluid results, then add slowly to the ointment, mixing well.

This, when applied to the healthy skin, produces no effect, but produces great power in arresting itching without over-stimulating the parts. It does not answer when the skin is at all broken; it is then necessary to employ other less irritating agents, but the burning sensation caused on its first application lasts but a few moments, while the relief lasts for hours, or even a whole day.

This compound is soluble also to a considerable strength in almond-oil, alcohol, and ether, as also in collodion. Dr. Bulkley has generally employed it according to the formula above given: sometimes he has ordered it of a less strength, half a drachm of each to the ounce; he has also used a drachm and a half of each to the same quantity.

#### TARNIER ON THE TREATMENT OF OBESITY AND AMENORRHEA OF YOUNG WOMEN BY MILK-DIET.

—M. Tarnier (*Journal de Méd. et de Chir. Pratiques*, 1876) was consulted some time ago by a young woman who was suffering from albuminuria. She was very fat, and had not menstruated for several months. He ordered only the rigorous employment of a milk-diet. Some months later he saw her again, and found her quite slender in form, and presenting all the appearances of health. She had followed his directions to the letter, and the amelioration of her symptoms had been rapid. First the albumen disappeared from the urine, and then the precocious obesity disappeared. Menstruation was gradually re-established as she grew thin, and her periods had begun to occur at normal intervals.

Shortly afterwards, M. Tarnier ordered milk-diet to a young woman who was very obese, and in whom there was absolute suppression of the menses. She had no albuminuria. The patient lost flesh rapidly, and menstruation was perfectly re-established.

Milk-diet must be classed among the alterative medications, but it has the advantage of being well borne by the stomach and of not disturbing the general health. In treating albuminuria with milk

M. Tarnier orders for the first day, one quart of milk with two portions of food; for the second day, two quarts of milk and one portion of food; for the third day, three quarts of milk and one portion of food; for the fourth day and afterwards, four quarts of milk and no food at all. In the treatment of obesity, it is not necessary to adhere so rigorously to the milk-diet; a small quantity of ordinary food may be allowed. The patient may take the milk in such quantities and at such times as she likes, provided she takes the prescribed quantity *per diem*. The duration of the treatment will vary in different cases. If diarrhoea set in, it is a sign that the treatment is not well borne. When the desired effect begins to show itself, it continues even after the treatment is suspended.

**JOHNSON ON MILK-DIET.**—In the *Lancet* for December 16, is a clinical lecture by Dr. George Johnson on the use of milk-diet, which he commends most highly in chronic diarrhoea, dysentery, and acute Bright's disease. The chief stress is, however, laid upon the value of the method in acute and chronic cystitis; and one case of rapid and complete cure in a very severe case of two years' duration is reported.

The milk may be taken cold or tepid, and not more than a pint at a time, lest a large mass of curd, difficult of digestion, form and collect in the stomach. Some adults will take as much as a gallon in the twenty-four hours. With some persons the milk is found to agree better after it is boiled, and then taken either cold or tepid. If the milk be rich in cream, and if the cream disagree, causing heartburn, headache, diarrhoea, or other symptoms of dyspepsia, the cream may be partially removed by skimming. One reason among others for giving the milk, as a rule, unskimmed, is that constipation, which is one of the most frequent and troublesome results of an exclusively milk-diet, is, to some extent, obviated by the cream. As a rule, it is unnecessary to add bread or any other form of farinaceous food to the milk, which in itself contains all the elements required for nutrition. When the vesical irritation and catarrh have passed away and the urine has regained its natural character, solid food may be combined with the milk, and thus a gradual return may be made to the ordinary diet, while the effect upon the urine and the bladder is carefully watched. There are some patients with whom unfortunately milk in any form, and even in small quantities, decidedly disagrees. Dr. Johnson suggests the employment of milk-diet as a preparation for the operation of lithotomy, and states that he has seen two cases in which the vesical irritation and catarrh resulting from a stone in the bladder were much mitigated by the milk-diet; the patients being thereby brought into a more favorable condition to undergo successfully, the one the operation of lithotomy, the other that of lithotripsy.

**LELION ON AN EXTERNAL APPLICATION IN AORTIC ANEURISM.**—M. Lelion describes in the *Gazette Hebdomadaire*, No. 43, a means of combating with an aneurism of the arch of the aorta, making way externally.

Collodion of castor-oil was the means employed. In a former series he applied successive layers one over the other for eight days; the skin below was not in the least irritated. He much prefers the following formula, for which he is indebted to M. Catillon, to the collodion of castor-oil of the French codex:—Pyroxilin, 8 parts; ether, 100; alcohol, 33; castor-oil, 8 parts.

**FORMULÆ.**—The following formulæ are taken from *La Presse Médicale*.—Expectorant Mixture.—R—Hydrochlorate of Apomorphia, 0.3 grains; Infusion of Senega, 300 grains; Simple Syrup, 300 grains; Distilled Water, 4 ounces. A teaspoonful may be given every half-hour in acute pulmonary affections.

A Powder for Nasal Catarrh (Beverley Robinson). R—Powdered Iodoform, Powdered Camphor, each 1 drachm; Powdered Gum, 2 drachms. Mix.—This powder is to be snuffed up into the nasal cavity to dry up the discharge which runs from the posterior nares, and often gives rise to a most disagreeable odour.

An antirheumatic Ointment (Gueneau de Mussy, *Union Médicale*). R—Extract of Belladonna, 4 parts; Extract of Hyoscyamus, 6 parts; Extract of Opium, 2 parts; Lard, 50 parts. This ointment may be rubbed over the painful joints three or four times a day in cases of acute articular rheumatism.

A remedy for Vaginal discharges (Trélat, *Courier Médical*). R—Pure Carbolic Acid, 1 part; Alcohol or Eau de Cologne, 30 parts; Water, 70 parts. Mix.—Plugs of cotton-wool saturated with this mixture must be passed into the vagina through a speculum, two or three times a day; and after their removal a slightly astringent injection should be used. As soon as the diseased parts are cleansed the foregoing may be replaced by a less active remedy—such as plugs soaked in glycerine, containing 1 part in 6 of tannin.

ALFRED SHEWEN, M.D.

#### RECENT PAPERS.

- On the Therapeutic Use of Podophyllin. By Dr. G. Bufalni. (*Lo Sperimentale*, February 1877.)  
On the Physiological Action of Muriate of Pilocarpin. By Dr. Rosenkranz. (*Deutsche Med. Wochenschrift*, March 3.)  
On the Action of Salicylic Acid in Typhoid Fever. By M. Albert Robin. (*Gazette Médicale de Paris*, February 10.)  
On the Use of Cyanide of Zinc in reference to a Rheumatismal Neuralgia of the Trigemini simulating Cerebral Rheumatism. By Dr. A. Luton. (*L'Union Médicale*, February 15.)  
On the Essence of Meat in Acute Blennorrhagia. By Dr. Lober. (*Ibid.*)  
Alcoholic Madness cured by Chloral-Hydrate. By Dr. Ranuerel. (*Ibid.*)  
On the Physiological and Therapeutical Properties of Glycerine. By M. A. Catillon. (*Gazette des Hôpitaux*, February 15.)  
On the Antipyretic Action of Salicylic Acid and its Salts. By Dr. Gressler. (*Gazette Médicale de Paris*, February 24.)

#### OBSTETRICS AND GYNÆCOLOGY.

**HECKER ON THE MORTALITY OF LYING-IN HOSPITALS.**—In the *Aerztliches Intelligenz-Blatt*, for November 7, 1876, Professor Hecker, of Munich, argues against the view which has been commonly adopted, that large lying-in institutions are necessarily injurious on account of the high rate of mortality in them. In support of his argument he gives statistics of the lying-in hospital at Munich for 17 years, from 1859 to 1875. This hospital, although not an old one, having been opened in 1856, is by no means built according to modern ideas with regard to isolation of wards and ventilation. There has, however, been no epidemic prevalence of puerperal disease for the last thirteen years. The total number of deliveries for the seventeen years is 13,469, out of which there were 237 deaths, or 17.6 per 1000. Professor Hecker regards this rate as satisfactory for a lying-in hospital, in which the results are necessarily more unfavourable than those of private practice, on ac-



count of the greater proportion of primiparæ and of unmarried women. The percentage, was, however, raised by an excessive mortality in the years 1862 and 1863, in which it was 31 and 37 per 1000. For the last thirteen years it has varied between 6 and 21 per 1000. The utmost precautions are taken in cleansing the wards, and in enjoining antiseptic ablutions upon the students; but on account of the short term of medical study, it is not possible entirely to prevent the latter entirely from practising anatomy while engaged in the study of midwifery. Patients affected by septicæmia are transferred in most cases to the general hospital, the deaths which occur there being included in the statistics.

**FISCHER ON UTERINE FIBROMA.**—In the *Medicinisch-Chirurgisches Centralblatt* for November 17, 1876, Dr. Edward Fischer relates the case of a patient, aged 40, who came under his care for menorrhagia. Hæmorrhage recurred every second or third week, and was profuse but free from clots. The patient was reduced to a weak condition; but, as there was no hæmorrhage in the intervals of the apparent periods, and no other abnormal discharge, the author regarded it as probably connected with approach of the climacteric. For more than a year he treated the case by internal remedies and by ordering vaginal injections of perchloride of iron, without making a pelvic examination. At length the patient became so ill as to be unable to leave her bed, and the discharge became offensive. By vaginal touch the os uteri was then found to be soft and patulous, and a smooth irregular body, as large as a nut, round which the finger could be passed, was felt within. The body of the uterus was felt as large as a man's fist, and inclined to the right side. After administration of ergot for five days, the os became dilated, and a large tumour was forced into the vagina. The patient suffered severe pains, and appeared almost moribund. On the eighth day, the tumour was seen to protrude at the vulva, its lower extremity being gangrenous. A few hours later, it was found lying outside the vulva, being as large as two man's fists, and attached by a pedicle about the size of a vaginal speculum. Not venturing yet to interfere with the knife, Dr. Fischer still left the case to nature. After three days, however, the whole tumour had become gangrenous, but did not separate. He therefore put a ligature round the pedicle and cut it off. It had a fibroid structure and weighed  $3\frac{1}{2}$  pounds. The ligature came away in a few days, but the pedicle after some weeks began to increase in size, and caused distress by pressure upon the orifice of the urethra, and projected outside the vulva. Traced upwards it became narrower, and where it escaped from the os uteri, it was about the size of the little finger. A ligature was then placed round it as high up as possible, and the remainder cut away. The patient after this began at once to improve, and was soon convalescent.

**HENNIG ON TOTAL EXTIRPATION OF A CANCEROUS UTERUS.**—In the *Allgemeine Wiener Medizinische Zeitung* for September 26, 1876, Professor Hennig, of Leipzig, relates a case in which he removed the whole uterus through the vagina, on account of cancer of the cervix. The patient was 45 years old, and was suffering severe hæmorrhage. She had been twelve times pregnant, but only once went to full term. The operation was performed in the lithotomy position, the emptied bladder being drawn forward by a catheter. After separating the uterus

by the knife from its attachment to the anterior vaginal wall and the bladder, Dr. Hennig endeavoured to shell it out of its peritoneal covering without opening the peritoneal cavity, an operation which he had successfully performed upon the dead subject. This did not succeed, on account of adhesions, the result of old pelvic peritonitis: but the uterus, including its peritoneal covering, was shelled out of its adventitious capsule. A knot of cancer was found to involve the rectovaginal septum, reaching the rectal mucous membrane. In removing this the rectum was laid open, the aperture being afterwards closed by sutures. The uterus was found to measure more than five inches in length; the left ovary and Fallopian tube, closely adherent to it, were removed with it. The hæmorrhage was checked by the insertion of ice. Some signs of peritonitis followed, and on the fifth day the temperature reached 105 Fahr.; but, after an evacuation of the bowels through the recto-vaginal fistula, the symptoms subsided. Four weeks after the operation, the margins of the fistula were vivified, and sutures inserted, with much difficulty. Two months after the operation, a swelling appeared in the right inguinal region, which proved to be an abscess, and was opened near Poupart's ligament. Six months after the operation, a knot of recurrent cancers, readily bleeding, was found near the site of the fistula. This was excised. At the date of the report, eight months after the operation, the patient was in improved health, and the fistula was reduced to a small size, not allowing any solid matters to pass. A. L. GALABIN, M.D.

**CHADWICK ON ABDOMINAL PALPATION IN PREGNANCY.**—In the *American Practitioner* for December 1876, Dr. James R. Chadwick, in a clinical lecture, calls attention to the diagnostic value of palpation. He points out that the classification and nomenclature of presentation and position of the fœtus *in utero*, as practised in the Vienna School, are the direct result of the prominence given in Germany to the external manipulation, as all the different presentations and positions can be determined *exclusively* from the data thus published. In addition to palpation, auscultation of the fœtal heart should never be neglected. The fœtal heart-sounds are almost invariably best heard through the back of the fœtus, the only exception being in face-presentations. He then enters more particularly into the signs obtained in each of the presentations and positions through palpation and auscultation. The diagnosis of twins and extra-uterine pregnancy is also given.

The complications of pregnancy as revealed by palpation, such as the death of the fœtus, the size of the fœtal head, hydrocephalus, contractions of the uterus, retroversion and rupture of the uterus, tumours such as fibroid, ovarian cysts, etc., are briefly touched upon. The hindrances met with are due chiefly to tension of the abdominal walls, muscular contractions, hydramnios, tenderness of the abdomen, adipose tissue, ascites and flatus.

**WETZEL ON POST PARTUM HÆMORRHAGE.**—In the *Aerztliches Intelligenz-Blatt* (No. 40, 1876) Dr. Wetzel narrates a case where hæmorrhage, eventuating in death, occurred in a patient where the uterus was fully contracted. She was aged 26, and this was her third pregnancy. She had lost much blood during the six weeks preceding delivery. The placenta was found to be prævia; turning was accomplished under chloroform and the child ex-

tracted. Hæmorrhage continued although the uterus was firmly contracted. Ergotin was injected subcutaneously, and ultimately cold water into the uterus, but without checking the hæmorrhage. The patient died about two hours after her confinement. No *post mortem* examination was made. The author considers the hæmorrhage must have been due to the bursting of a varix or an aneurism in the uterus; or else some rent in the uterus or cervix, though no evidence of this latter was detected on examination. He doubted whether a tampon with liquor ferri perchloridi would have checked the hæmorrhage. [Had he tried it, and given the patient the benefit of the doubt, the result would probably have been far different.—*Rep.*]

ARTHUR W. EDIS, M.D.

**FLIES ON GALVANO-PUNCTURE OF AN OVARIAN CYST.**—Dr. Flies (*New York Medical Journal*, January 1877) has employed galvano-puncture in a case of ovarian cyst, which was transferred to his care by Professor Schöller, of Berlin. The patient was a married woman, aged 30, who had borne several children, whose abdomen began to enlarge in December 1867, and who came under treatment in November 1868. It does not appear from the description of the case whether the cyst was unilocular or multilocular. The method of treatment was as follows. In the right iliac region a slightly oiled trocar was pushed through the abdominal walls into the cyst; a steel wire connected with the positive pole of a galvanic battery, and insulated up to nearly its end by a coating of varnish, was introduced through the cannula, so that a small portion of the insulated part of the wire projected beyond the cannula into the cyst. A moistened negative electrode was applied externally to the other side of the abdomen. A current of eighteen cells was used for eight minutes, and for a time every other day. The current was, as time went on, increased to twenty cells, and the applications prolonged to half an hour. In January, after twenty sittings, there was a diminution in the circumference of the abdomen amounting to fifteen and seventeen centimetres in three different regions which had previously been marked with nitrate of silver, and measured. After the last application, however, symptoms of peritonitis set in, and the patient died. No *post mortem* examination was allowed.

[One reason given by Dr. Flies for his undertaking galvano-puncture of an ovarian cyst—viz., that prognosis is generally unfavourable in these cases, and that operative treatment is dangerous and doubtful in its results—can no longer be said to exist, as the practice of Mr. Spencer Wells and others shows ovariectomy to be not more dangerous than other capital surgical operations. Moreover, his method of applying the current must be considered faulty, as, by using the positive pole in the cyst, he would introduce irritant metallic salts into it; while, if he had employed the negative pole, which is not changed by the action of the current, he would have avoided such a risk. We suggested this latter treatment ten years ago, and it has been put into practice by Dr. Fieber, of Vienna, with a successful result, in one case. Several other successful cases have been published by American practitioners, but not with sufficient detail to inspire confidence. We consider that in patients who have an insuperable objection to surgical operations, the electrolytic procedure would be allowable, more particularly in unilocular cysts with fluid contents; while in multilocular cysts, with solid

or semi-solid contents, only little could be expected from such a treatment.—*Rep.*]

JULIUS ALTHAUS, M.D.

**DUNCAN ON LACERATIONS OF THE EXTERNAL GENITAL ORGANS DURING LABOUR IN PRIMIPARÆ.**—Dr. Matthew Duncan, in the *Obstetrical Journal of Great Britain and Ireland*, January 1877, remarks that to the clinical instructor, deliveries without injury in multiparæ are valuable as affording him opportunities of demonstrating the true character of the lochia. The injuries that can be discovered in examining women after delivery are, for the most part, arranged round the vulva in a stellate manner, radiating from a centre. Of 89 injuries described in this report, 83 were of this stellate character.

Some were the result of a longitudinal or axial strain, which gave rise to lacerations more or less circular or parallel to the margin of the distended orifice—that is, transverse to the direction of the strain. Besides these, there is a third kind of wound, the central perineal rupture. This form is the result of over distension of the passage leading towards the vaginal orifice, the strain being transverse to the axis of the passage and the laceration in the axis of the passage. Twelve per cent. of the injuries are referred to this category.

Of the vestibular or anterior lacerations and the perineal or posterior lacerations, the latter were the most extensive. While the perineal were always in the mesial line, or near it, the anterior or vestibular lacerations were rarely mesial.

On the right side there were twenty lacerations, on the left twenty-seven. Perhaps this may have some bearing on the greater frequency of phlegmasia dolens and of perimetritis and parametritis on the left side.

**KØBERLE ON CHROMIC ACID IN THE TREATMENT OF ULCERATING GRANULATIONS OF THE OS UTERI.**—In the *Annales de la Société de Médecine de Gand*, M. Kœberle prefers chromic acid as a cauterising agent to the other remedies usually used, as pernitrate of mercury, iodine, nitrate of silver, and the actual cautery. He uses it in the crystalloid condition. It is a very anhydrous substance, and readily absorbs the moisture from the tissues which it may touch. M. Kœberle applies it through an India-rubber speculum on a tampon of cotton-wool. Vomiting often supervenes within fifteen or twenty minutes from the application of the acid. When the tissues are seriously altered, it is necessary to repeat the cauterisation, but M. Kœberle has hitherto found three applications to suffice. After the application he applies a tampon, and advises the patient to use two soap-and-water injections daily. He treats all ulcerations of the os in this way, as in epithelioma.

**PARIS ON THE EMPLOYMENT OF THE HAND IN RECTIFYING VICIOUS PRESENTATIONS OF THE HEAD DURING LABOUR.**—In the *Annales de la Société de Médecine de Gand*, Dr. J. Paris draws attention to three positions of the foetal head at the brim which he is in the habit of changing when they are diagnosed; 1. Head flexed in all positions; 2. Occipito-posterior presentation; 3. Mento-posterior presentation. He introduces the whole hand, under chloroform, into the vagina, the back of the hand lying in the hollow of the sacrum; the other hand is on the fundus uteri. He seizes the head and raises it; in the first and third cases he only flexes the head more or less. In the second case, the occipito-pos-



terior, the manoeuvre is more difficult; the head is seized and raised with the right hand, and an attempt is made to turn the occiput round to the front, whilst the left hand acts on the shoulder, which is in front, and endeavours to push it backwards. Dr. Paris relates a case of mento-posterior presentation, where efforts had been made for an hour to procure rotation without success. He introduced his hand, raised and flexed the foetal head, and extracted a living child in a few minutes with the forceps.

**GALICIER ON THE MOVEMENTS OF ASPIRATION OF THE CERVIX UTERI.**—In *La France Médicale*, Jan. 27, 1877, Dr. Galicier writes that, during an application of the speculum, he observed the following facts. The cervix was half opened by the separation of the two lips in the form of a cup. The lips closed and opened more or less in proportion as he pressed in the speculum or withdrew it. Dr. Galicier is surprised that the fact has not often been observed. He regards it as a starting point for those who may make researches respecting the mechanism of aspiration during coitus.

**HOGGAN ON THE PATHOLOGY AND TREATMENT OF DYSMENORRHOEAL MEMBRANE.**—In a reprint from the *Archiv für Gynecologie*, Dr. and Mrs. Hoggan give their views on the pathology of dysmenorrhœal membrane as follows. Having placed the two ends of such a membrane under the microscope, they found the structure of the vaginal end of the membrane to consist of a simple exfoliation of the superficial layer of the vaginal membrane formed of pavement epithelium, which clothed the superficial vaginal mucous membrane. In many places the membrane could be split in two layers. As regards the uterine segment of the membrane, it differed from the vaginal portion in the following respects. It consisted of a typical example of embryonic cell-tissue in an early stage of development. In a number of horizontal sections, embryo-cells in different stages of development were found embedded in a transparent matrix or intercellular substance. Some of these were spindle-shaped, others like white blood-corpuses, with one or more nuclei. In their opinion, the dysmenorrhœal membrane is identical with the decidua in its early stage. Their treatment is based on the supposition that dysmenorrhœal membranes may be warded off by the free administration of anaphrodisiacs. To attain this, large doses of bromide of potassium in combination with iodide of potassium, are recommended several days before the onset of menstrual flow and its accompanying irritation.

**SMITH ON SO-CALLED ULCERATION OF THE WOMB.**—In the *Obstetrical Journal of Great Britain and Ireland*, Dec. 1876, Dr. Heywood Smith remarks that true ulceration of the cervix uteri is a disease of extreme rarity. It may be strumous, syphilitic, or rodent; whereas the condition commonly called "ulceration of the womb" is really "granular inflammation of the cervix," and is one of the most common of the diseases that fall under the observation of the physician in the out-patient room.

**CHARPENTIER ON INSTRUMENTS INTENDED TO REPLACE THE FORCEPS.**—In the *Annales de Gynecologie*, Dec. 1876, Dr. Charpentier points out very forcibly the dangers of the leniceps and the retroceps. The leniceps is already forgotten; and, even were it

not for that excessive love which inventors bear to their creations, the retroceps would by this time have shared the fate of the leniceps. Let us leave, says Dr. Charpentier, mechanical traction to the veterinary surgeons, and remember that the lives of a mother and child have a different value from those of a cow or a mare. We should never trust to an unknown mechanical force; it may be too great or insufficient for the purpose it is used. With the forceps, the operator always can regulate the force he uses as occasion requires; with the leniceps and the retroceps, it is otherwise. **FANCOURT BARNES, M.B.**

**HOMANS ON UTERINE FIBROID COMPLICATING LABOUR.**—At a meeting of the Boston Obstetrical Society (*Boston Medical and Surgical Journal*, Nov. 16), Dr. Homans related a case of large uterine fibroid attached to the posterior hip and complicating labour. He had reported the case of this patient at the previous meetings of the Society; and the patient had been confined a fourth time three weeks ago. At the first confinement, there was great difficulty in extracting the child. The tumour was then of the size of a big fist. The second child, small, was born about fourteen months after the first, at the eighth month. When the patient was seen, the waters had broken and the head was presenting. Delivery was accomplished by forceps. The third labour was at the seventh month, and the child was born before the arrival of the doctor. The fourth labour was at six-and-a-half months. The first tumour was still present, and opposite to it was a second of equal size. The foetus was drawn away; but the placenta was left behind till the next day, when it was expelled by the uterus, fifteen drops of the fluid extract of ergot having been given every three or four hours in the interval. The two tumours remain, and there is, apparently, a third tumour in the body of the uterus. Examinations at other times than at the labours have not been permitted.

Dr. Lyman said that it is stated that these tumours develop with the development of the pregnant uterus, and that after labour they disappear by undergoing with the uterus a process of involution. When they do not undergo this process, he did not see why these tumours should not be removed. He mentioned the case of a patient who, at the time of delivery, had quite an uncomfortable tumour which, within a year after labour, had entirely disappeared.

Dr. Chadwick said that there was no doubt that such tumours disappear during the puerperal period. He had heard Scanzoni refer to the case of a tumour which at labour was as large as a cocoa-nut. Four months afterwards there were no traces of it. He had seen a pregnant woman with a fibroid tumour as large as an orange, situated in the anterior wall of the uterus. Three months after delivery the tumour could not be found, and had been probably absorbed. Dr. Chadwick remarked upon the curious fact that fibrous tumours are apparently no obstacles to conception, which takes place as frequently with as without the presence of the tumour.

**AVELING ON THE INFLUENCE OF POSTURE ON WOMEN.**—An article by Dr. Aveling upon the influence of posture on women is continued in the *Obstetrical Journal* for February. The author thinks that posture has not a very marked influence upon ovulation, but still he believes that it may be one of the causes determining the age at which puberty sets in. Dr. Aveling also thinks it not improbable that the act of copulation often causes rupture of a

Graafian follicle. Anomalies of ovulation are attributed to posture. Hyperæmia and hypertrophy of the ovum, and painful ovulation, may be caused by a vicious posture. "The passage of the ova along the Fallopian tubes is perhaps less affected by position than the transmission of spermatozoa." Still, the author thinks that posture may indirectly by hyperæmia cause obstruction of tubes, sterility, abdominal or tubal gestation. Membranous dysmenorrhœa is traced back to posture, hyperæmia, and hypertrophy of the uterine mucous membrane. Posture may also influence the exit of the membrane from the uterus. Attention is specially drawn to the marked influence which posture has upon the period, quantity, and duration of the menstrual flow; and the careful avoidance of standing and sitting during the menstrual period of girls is insisted upon. Dr. Aveling says that attention to posture, whether as a primary or a supplementary curative agent, will always prove satisfactory to the practitioner in excessive menstruation. The importance of posture as a remedy for dysmenorrhœa is pointed out. Impregnation is said to be much more likely to occur when intercourse takes place in the normal position, *i.e.*, anterior apposition; and conception is said to be favoured by a continuance of the supine position after intercourse. "Flexing the spine and debasing the pelvic inclination," is said to be "liable to cause disorder of the pelvic organs" in the pregnant state. The displacement of the gravid uterus to the right side of the abdomen is said to be most probably due to the left lumbar curvature of the spine. The postural treatment of a tendency to abortion is fully insisted upon.

POLAILLON ON DISLOCATION OF THE XIPHOID CARTILAGE DURING PREGNANCY.—In a paper read before the *Société de Chirurgie*, M. Polaillon described a case of this kind. The patient was twenty-seven years of age, and for a long time had worn a tight corset to conceal her condition. During the seventh month of her pregnancy she began to notice a painful tumour in the middle line immediately below the sternum. The swelling remained painful up to her delivery, during which the patient suffered so much pain that recourse was had to the forceps.

Consolidation took place subsequently, but the cartilage remained in an abnormal position.

M. Polaillon added that he could find but two similar cases recorded.

DEPAUL ON ABDOMINAL TOUCH.—In the *Journal des Sages-Femmes*, M. Depaul says that the tendency of the gravid uterus to bear to the right side of the abdomen may be considered as the rule. He then points out that there are many reasons for this peculiarity. Firstly, the right round ligament is a little shorter and larger than the left. Secondly, the rectum is on the left of the uterus, and must tend to push the uterus to the right. This will be much more likely to take place if the rectum be loaded with fæces. M. Depaul says that he has made necropsies of eight cases in which the rectum lay on the right side, and in every one of them the gravid uterus was pushed to the left instead of the right side.

GRIFFITH ON REMOVAL OF AN INTRA-UTERINE MUSCULO-FIBROUS TUMOUR.—Dr. de Gorreque Griffith relates, in the *Obstetrical Journal* for February, a case in which the tumour filled the whole of the vagina. The treatment consisted in boring the

mass with the finger, crushing with the cephalotribe, and amputation with the *écraseur*; complete recovery followed. A. SHEWEN, M.D.

PERRO ON REMOVAL OF THE UTERUS AND OVARIES AS A COMPLEMENT OF CÆSAREAN SECTION.—Professor Perro, of Pavia, relates in the *Annali Universali di Medicina* for October, a case in which he successfully performed Cæsarean section in a case of malformed pelvis, afterwards removing the uterus and ovaries. He discusses the propriety of the operation at some length, and arrives at the conclusion that the proceeding is indicated: firstly, in cases attended with severe and incoercible hæmorrhage, and secondly, in cases of sloughing, erosion, or other grave lesions of the uterine tissue, whether arising from the prolonged duration of labour, from manipulations, or from accident. A. HENRY, M.D.

#### RECENT PAPERS.

On Nursing. By M. Archambault. (*Le Progrès Médical*, Nos. 1, 5, and 8, January and February.)

M. Tarnier's New Forceps. (*Le Progrès Médical*, February 24.)

Amputation of the Uterus and Ovaries as a complement of Cæsarean Section. By Dr. C. Nerazzini. (*Commentario Clinico di Pisa*, No. 1, 1877.)

Two Successful Cases of Ovariectomy. By Dr. Gillette. (*L'Union Médicale*, February 10.)

#### OPHTHALMOLOGY AND OTOLOGY.

MOOS ON THE CONNECTION BETWEEN DISEASES OF THE ORGAN OF HEARING AND THE NERVOUS TRIGEMINUS.—Professor Moos, of Heidelberg, has published a paper with the above title in Virchow's *Archiv für Pathologische Anatomie und Physiologie*.

He divides the diseases which affect the organ of hearing and the trifacial into two groups: 1, Cases of purely cerebral disturbance of the acoustic and the fifth nerve, in which the sensory portion only of the fifth is affected; and 2, Cases in which organic affection of the hearing organ is present, generally acute or chronic purulent inflammation of the middle ear, with disturbances of the trifacial, the latter having commenced when the hearing organ had become affected.

He relates four cases belonging to the *first group*, occurring at the ages of 14, 17, 21, and 45, and having assigned to them as their causes traumatic injury in one, cold in two, and some chronic affection causing ataxy in its course, but the cause of which was not determined. In this group, he says, the symptoms go, as a rule, from the trigeminus to the acoustic, and only in the traumatic case did they both enter together.

The hyperæsthesia may be trifling, and when so, is apt to be overlooked by the patient. It may disappear without anæsthesia coming on, and then it seems a case of deafness only. It is never double-sided. In one case it was almost total on the side affected, on another only on certain twigs. In one where the auricle and meatus were affected, the corresponding parts on the opposite side were anæsthetic. The patient whose affection had been gradually developed had suffered from migraine for many years, but it had disappeared before the anæsthesia of the same side came on. During the hyperæsthetic stage, certain disturbances of hearing may



be present, especially an unusual sensibility to certain tones, noises, voices, &c., which, Professor Moos thinks, depends on an increased sensitiveness of the meatus.

Anæsthesia was observed in three cases, and was total in two. Functional disturbance of the acoustic nerve was present in all the cases. In three of them it commenced with violent tinnitus, which gradually lessened as the acuteness of hearing was lessened, till with complete deafness the subjective noises entirely disappeared. Deafness became total in two; a third recovered entirely, the latter having had at the commencement of the affection a true hyperæsthesia of the acoustic nerve.

Professor Moos believes the seat of the affection to be central, and in a position where the acoustic and the sensory portion of the trigeminus stand in a close relation to each other. This is in the medulla oblongata, at that portion where the deep root of the acoustic nerve arises, which is in close relation to that fibrous bundle formed by the root of the trigeminus, from which, according to Arnold and Deiters, some fibres pass to the corpus restiforme and to the posterior columns of the spinal cord. He thinks these relations will explain certain combinations of symptoms which occur, but not all the combinations.

The treatment consisted of iodide of potassium, setons in the neck, and galvanism. Under these full recovery took place in one case—that in which the nature of the affection was not fully made out. Professor Moos's conclusions as to the use of galvanism are not favourable. Though believing that the constant current is the most natural treatment, he says the prognosis is very unfavourable. When the reaction of the acoustic by galvanism remains persistently absent, the prognosis is especially bad; and when reaction is present even at the commencement, improvement or recovery is not certain.

In the *second group* the affection of the trigeminus nerve may be previous to, accompany, or follow the affection of the auditory apparatus. It generally enters with it. The first branch is most often affected, the second less so, and the third still less. Only one branch is usually implicated. The diseases of the ear with which Dr. Moos has seen the derangement of the trifacial nerve combined are acute purulent inflammation of the cavity, chronic inflammation of the same, chronic inflammation of the mastoid, with or without phlebitis of the transverse sinus, and cholesteatoma of the cavity.

In *acute cases* Professor Moos supposes there may be (1) a simultaneous development of the neuralgia with the ear-affection, arising from the same cause; (2) a direct inflammation of the tympanic plexus with direct peripheral conduction through the small superficial petrosal nerve, or first centripetal conduction, and then eccentric appearances on a branch of the trigeminus nerve; (3) an otitis media purulenta neuralgica, analogous to the "iritis neuralgica" of Anstie.

In *chronic cases* he assumes either (1) an irritation of the tympanic plexus by pressure of exudation or accumulations; (2) perineuritis and neuritis; (3) communication of the inflammation to the temporal bone without caries, with partial pachymeningitis, affection of the sinuses, or inflammation of the Gasserian ganglion. W. LAIDLAW PURVES.

FAVRE ON DALTONISM AND NAVIGATION.—In the *Lyon Médical* for January 21, Dr. Favre, who is well known as an authority on colour-blindness, urges the necessity for a systematic examination of

sailors in that respect. After much inquiry he has found that the subject has been hitherto overlooked, and, with others who are favourably placed for judging, he agrees in the opinion that many of the disastrous collisions at sea, which occur principally at night, are due to a false perception of the colours of the lights used as signals.

Dr. Favre quotes from a recent paper by M. Fériss, in proof of the fact that colour-blindness exists among the sailors of the French navy. M. Fériss examined 501 sailors at Lorient, and found that 47, or about 9.4 per cent., were wanting in the accurate perception of colour. He also examined 152 men on board the *Hamelin*, and found 18, or 11.83 per cent., affected. These were not all equally faulty, and M. Fériss adopted a classification which may be a useful guide to future investigators. 1. Those who hesitated in distinguishing colours, of whom there were 5. 2. Those who confused slight shades of different colours, as pale blue for green, 2 in number. 3. Decidedly colour-blind; (a) confusing blue and violet, of whom there were 6; (b) confusing both blue and violet and also red and green, of whom there were 4.

Dr. Favre concludes his paper with some very forcible remarks on the necessity which such results show for a systematic examination of the eyes of those following maritime occupations.

BRIÈRE ON ECTROPION.—Dr. Brière, of Havre, reports two cases of ectropion, illustrated by photographs of the conditions before and after treatment.

1. *Ectropion following caries of the orbit.* A boy, aged 10, had suffered for three years from a total ectropion of the left lower eyelid, produced by cicatricial contraction and adhesion of tissues to the bone after a carious abscess at the lower and outer part of the orbital margin. The tarsal border was completely everted and separated from the globe by masses of hypertrophied conjunctiva. The cutaneous surface of the lid was shortened, and bound down to the periosteum; the conjunctival surface thickened, and the free border of the lid stretched.

Dr. Brière, considering that mere excision of the hypertrophied conjunctiva would not suffice, determined to detach the lid from its deep adhesions, raise it, and reduce its length.

To attain these ends, the patient was put under chloroform, and the following were the steps of the operation. 1. A slightly oblique incision was made in the skin, 4 centimetres in length, extending downwards and outwards from the external commissure. 2. An incision was made parallel to the margin of the lid, in order to separate the tarsal border from the hypertrophied conjunctiva. 3. The cutaneous flap was dissected up, and the adhesions at its outer half to the periosteum were divided. 4. The whole of the hypertrophied masses of the conjunctiva, from one angle of the eye to the other, were freely excised. 5. Four long threads (*anses de fils*) were passed through the lid below the tarsal cartilage, and held in place by a small roll of diachylon plaister, slightly longer than the lid; the four double threads were then tied together, and by their means an assistant drew the entire eyelid upwards. The lid thus measured on the surface of the globe was found to be 4 millimetres too long. 6. This excess was removed with scissors; then, whilst the assistant drew the lid upwards, the two cutaneous flaps forming the external commissure were united by four pins and a twisted suture. 7. Lastly, the inferior extremity of the conjunctival flap resting upon the globe was dissected up and united to the tarsal margin by five fine sutures.

The lid was kept in its raised position by the four double threads which were fastened to the forehead by strips of diachylon plaister. The wounds were dressed with linen moistened with glycerine, covered with a compress of several folds of linen, and over all a cushion of cotton-wool and a bandage.

Union took place by first intention; the conjunctivo-tarsal sutures were removed after forty-eight hours, and the twisted suture after four days. The four long threads which sustained the lid in position were kept fixed to the forehead for eight days, in order to counteract the tendency to contraction downwards.

Two months after the operation the commissural opening was becoming a little wide, owing to retraction of the lid. To remedy this Dr. Brière vivified the edges of both lids for about 4 millimetres, and induced permanent union by suture. Seven months after operation the cicatrix in the skin had disappeared, the opening of the lids was a little rounded; there was no trace of the ectropion remaining.

Dr. Brière remarks that in this procedure he deviated from the plan adopted by von Graefe, in omitting the vertical incision at the internal extremity of the lid, which he considers useless in the greater number of cases; and he avoided taking flaps from the temple, a plan which he has found to be only partially successful.

**SWANZY ON THE TREATMENT OF AMBLYOPIA.**—In the *Dublin Medical Journal* for January 1877 Mr. Swanzy reports four cases of amblyopia, which were benefited by the inhalation of the nitrite of amyl. The improvement was marked in degree, and followed rapidly the first few doses.

The first case reported was due to continued exposure to strong light; the others, to the abuse of alcohol and tobacco.

The ophthalmoscopic appearances were negative in the left eye of the first case (in the right there was a hazy vitreous body and no prospect of improvement); and in the others the changes in the disk varied from a doubtful paleness to a distinct loss of the natural pink hue and a dirty white discoloration.

The degree of impairment of vision ranged in the different cases from one-fourteenth to about one-fourth of the normal standard, and perception of colours was exceedingly defective.

On the supposition that, in the cases due to abuse of alcohol and tobacco, the disease consisted in defective nutrition of nerve-substance, phosphorus was given in one case with benefit. The most remarkable results, however, followed the inhalation of nitrite of amyl in doses of ten drops administered on cotton-wool. In two cases after the first inhalation, and in the others after a rapidly succeeding second dose, a marked degree of increase of visual power was observed, occurring within a few minutes of the inhalation.

The treatment was carried on at the rate of two or three inhalations *per diem*, without ill effect, for a month or six weeks, with the result of an increase in visual power, in one case, to four times the amount existing before treatment, and in the others to a valuable extent. The results appear to have been permanent, and Mr. Swanzy conjectures that the probable explanation of the improvement lies in the increased supply of blood to the nerve-centres, from dilatation of the capillaries, consequent upon the known paralyzing effect of the nitrite of amyl upon

the vaso-motor nerves of the head and neck. Mr. Swanzy appends a list of authors who have noticed nitrite of amyl, and a brief summary of their opinions.

**HATRY ON IMPAIRMENT OF VISION WITH CHANGES IN THE PAPILLA AND CIRCUMPAPILLARY ZONE ACCOMPANYING PAROTITIS.**—Dr. Hatry (*Ré-cueil de Mémoires de Médecine Militaire, Paris, 1876*, abstract in *Annales d'Oculistique*, Nov.-Dec. 1876), observed in nine cases out of seventy, occurring in soldiers, an exaggerated degree of parotitis. This was accompanied by impairment of vision, characterised principally, during the height of the affection, by hyperæmia of the papilla, diminution of the acuity of vision, alteration in the perception of colours, haziness of objects, &c. There were also photophobia, photops, vertigo, lachrymation, conjunctival injection, and swelling of the eye-lids. Dr. Hatry attributed these symptoms to the compression exercised by the enormously swollen parotids upon the vessels of the neck, and the consequent determination of congestion in the intracranial and intra-ocular cavities. Normal vision returned in most of the cases in from fifteen to twenty days, but in one case the condition remained unrelieved for forty days.

**VINCENTIS ON THE STRUCTURE AND GENESIS OF CHALAZION.**—Dr. Vincentis of Naples, (abstract in *Annales d'Oculistique*, Nov.-Dec., 1876), finds that chalazion is composed of giant-cells and an enveloping capsule. The capsule is not simple, but formed of two parts, of which one envelopes the greater part of the tumour, and the other is accessory to the cartilage. The tumour also is composed of two parts, a central, homogeneous in character, and an external, consisting of small masses separated from one another by connective tissue. The origin of a chalazion lies in the inflammation of a Meibomian follicle, and the giant-cells spring from the epithelium of the Meibomian gland. LLOYD OWEN.

**TEILLAIS ON A CASE OF DIABETIC CATARACT, WITH SUGAR IN THE CRYSTALLINE LENS.**—M. Teillais, of Nantes, reports this remarkable case in the *Annales d'Oculistique de Bruxelles* (abstracted in *Journal de Médecine et de Chirurgie Pratiques*, Feb. 1877). It occurred in a young woman, aged 23, a diabetic for some years, much emaciated, and who secreted about 300 grammes of sugar daily. She had become blind in three weeks, but the complete blindness was preceded by frequent visual troubles which for two years had affected the patient intermittently. There appeared in her some little, though transitory, amelioration, after she had lost her sight, a fact which not unfrequently occurs in diabetic cataract. She had a double soft cataract. After having assured himself of the integrity of the deep membranes, M. Teillais yielded to the wish of the patient, who desired to submit herself to the chances of operation. Both eyes were operated upon, with an interval of ten days, by linear extraction. There was no accident, and the results of the operation were satisfactory. Five months later the improvement was maintained. Lastly, chemical examination of the crystalline lens demonstrated the presence of sugar. This last fact, often contested, is not less remarkable than the success obtained under the circumstances. We know, indeed, that many surgeons forbid this operation as useless and often dangerous. After this fact to the contrary, and a certain number of similar cases, we may be allowed to relieve diabetics of the most cruel of their infirmities.



**CRITCHETT ON AN UNIQUE CASE OF INOCULATION OF THE EYE BY VACCINE VIRUS.**—In the *Medical Examiner*, Dec. 21, Mr. Anderson Critchett relates the following remarkable case. "At the beginning of last September, I was consulted by a medical man in large practice in the North of England. On examining his right eye, I found the following condition. The lids and conjunctiva were swollen and red; there were lacrymation and photophobia, and the eye resented even the most gentle examination. A large greyish-white opacity could be seen extending over the outer two-thirds of the cornea. The centre was raised, and from its general aspect and colour conveyed an impression of seropurulent infiltration between the layers of the cornea. The condition of the anterior chamber and iris appeared to be normal. The history which I received of the case was as follows. About three weeks previously to his visit to me, this gentleman was vaccinating an infant, and, whilst stooping over the arm, a sudden and violent movement on the part of the child jerked the charged ivory point from his fingers into his right eye. Suspecting that some of the lymph had come into contact with the cornea and conjunctiva, he immediately and assiduously endeavoured to wash it out, but, as the sequel proved, without success. Inflammation supervened at the end of twenty-four hours, and was accompanied with severe symptoms, the cornea becoming gradually implicated, and developed such a form of opacity, combined with interstitial infiltration, as left no doubt that inoculation of vaccine virus had occurred, resulting in the formation of a true vaccine pustule.

"Three months have now elapsed since his first visit, all traces of inflammation have passed away, the conjunctiva has resumed its natural colour, the lacrymation and intolerance are gone, and the eye opens as readily as its fellow; but, occupying rather more than the outer half of the cornea, is a dense white opacity, which most seriously compromises the vision. As the area of clear cornea has sensibly increased since the subsidence of active inflammation, it is not improbable that further improvement may take place during the next few months: the question will then arise how far it may be expedient to endeavour to obtain an increase of the present very limited range of vision by means of a small iridectomy inwards." In remarking on the case, which Mr. Critchett says is, as far as he is aware, the only one of the kind on record, he considers that it is of interest not only on account of its rarity, but also "as illustrating the great danger of allowing vaccine virus to come into contact with the eye, since the absorbent power not only of the conjunctiva oculi, but also of the surface of the cornea itself, is so great as to develop in the manner described a complete vaccine pustule resulting in a permanent corneal opacity. It may also suggest a possible explanation of the manner in which the cornea is frequently affected in small-pox."

[Mr. Critchett does not tell us whether he adopted any treatment in the above case.—*Rep.*]

W. DOUGLAS HEMMING.

**MANNING ON AMBLYOPIA FROM RETINITIS PIGMENTOSA: IRIDECTOMY.**—Dr. T. D. Manning relates the following case in the *American Practitioner* for September 1876.

M., aged 13, applied in June 1875 for admission to the Texas Institute for the Blind, but could not be received until the next September. The surgeon in

charge obtained, however, at the time the following history. From childhood, and especially after beginning school, which was at an early age, the patient complained of "weak eyes." At first the trouble was not so much actual dimness of sight, as inability of the eyes to bear prolonged use. At the close of a day at school, her eyes were fatigued and easily suffused. This condition gradually increased until there was perceptible failure of sight; and finally, two months previously to applying at the institution, the trouble culminated in actual blindness throughout a greater part of the field of vision in the left eye, and inability to read ordinary print with the right eye. The eyes had a vacant look, as if nothing were seen distinctly, while a convergent strabismus was noticeable in the left eye. The ophthalmoscope revealed a widespread pigmentary deposit throughout both retinæ, the extent of deposit being about equal in the two eyes. Large dark masses, composed of granular or "irregular-shaped spots," with prolongations following the course of the retinal vessels, occupied most of the face of each retina. Tension was not notably increased in either eye; but anæmia of the left retina was perceptible.

Although necessity of immediate attention to the diseased organs was urged by the surgeon in charge, the patient was not seen again for four or five months, when, in November, the left eye was found to have only qualitative perception of light from the temporal side; the right eye could distinguish No. L Snellen, at twelve feet from the temporal side, the field of vision being exceedingly narrow. Many of the retinal vessels of the left eye were apparently obliterated, while the retina of the right eye showed a decided paleness. Hemeralopia was now distinctly marked, and headache coming on at night prevented sleep. The headache was probably due, as Von Gräfe has pointed out, to the failing sight, and is produced by the intent endeavour of the patient still thoroughly to realise the visual impression.

Although things seemed so hopeless, it was determined to give the patient the benefit of an iridectomy in the right eye, removing at least one-fifth of the iris through an upward incision in the sclero-corneal junction. No pain or other trouble followed, and when, at the end of four days, the bandage was removed, the patient immediately declared she could see better by far with either eye than before the operation. Two months later she could read ordinary print with her right eye, and at the expiration of three other months she was able to read the finest print with that eye.

The left eye, before considered as entirely amaurotic, and beyond any relief whatever, had also gained somewhat, though very little. This little gain, however, coupled with a return of pain on that side, led to an iridectomy on the left eye; and while it effected no improvement in its sight, it gave permanent relief of the pain in the orbital region. The operation was not as thorough as was desired, the iris not being removed up to its ciliary attachment; yet the failure to increase vision was due, no doubt, to atrophy of the optic nerve, as shown by the ophthalmoscope.

The prognosis in this affection is extremely unfavourable, and no special treatment further than to protect the eyes from bright light and over-taxation is insisted on. The disease—retinitis pigmentosa—is evidently characterised by a decided torpor of the retina; the retinal vessels diminish in caliber, and many of the smaller branches are apparently obliterated.

The foregoing is the only case within the knowledge of the writer where retinitis pigmentosa has been treated by iridectomy, done as in incipient glaucoma, and more particularly where no abnormal tension could be discovered after the most careful examination.

The patient has a brother three years her junior, whose eyes seem to be going as hers went. The pigmentation in his appears to be equal to that observed in his sister's, though he still preserves good sight on first impression. A double iridectomy will be done for him with the hope of saving vision in both eyes.

### RECENT PAPERS.

- Cases of Dilatation of the Lymphatics of the Conjunctiva Bulbi. By Dr. J. Imre. (*Wiener Medizin. Wochenschrift*, December 23.)
- Remarks on some of the Rarer Syphilitic Neuroses of the Eye. By Dr. C. S. Bull. (*American Journal of Medical Sciences*, January.)
- The Relations of Blepharitis, Ciliaris, and Anisotropia. By Dr. St. John Roosa. (*Ibid.*)
- On a Modified Mode of Detecting Paralysis of the Ocular Muscles. By Dr. H. Culbertson. (*Ibid.*)
- On the Value of Certain Ocular Symptoms in the Localisation of Cerebral Diseases. By Dr. Landolt. (*La France Médicale*, February 3.)
- A New Method of Determining Refraction by the Ophthalmoscope. By Dr. Schmidt-Rimpler. (*Berliner Klinische Wochenschrift*, January 22.)
- A Case of Lacrymal Fistula successfully treated by Destruction of the Lacrymal Sac. By Dr. Spediacci. (*Lo Sperimentale*, January.)
- Near-sightedness in the Public Schools. By Dr. C. B. Agnew. (*New York Medical Record*, January 20)
- On the Exploration of Acoustic Sensibility by means of the Inter-audicular Tube: the Physiological Theory, its application to Medical Jurisprudence, Medicine, and Military Surgery. By Dr. Gellé. (*Gazette Médicale de Paris*, January 6, 1877.)
- The Disproportion between the Power of Hearing the Tick of a Watch and the Human Voice. By Dr. St. John Roosa. (*American Journal of Medical Sciences*, January.)
- On Hysterical Amblyopia. By Dr. Galezowski. (*Gazette des Hôpitaux*, January 25 and February 26.)
- The Power of Distinguishing Colours; a Cause of Error not pointed out in the Ophthalmoscopic Measurement of Refraction. By M. Badal. (*Gazette Médicale de Paris*, February 6.)
- Physiology of Hearing. By M. Gellé, (*Gazette des Hôpitaux*, February 6.)
- On the Exchange of Gases in the Tympanum. By Dr. Læwenberg. (*Le Progrès Médical*, February 24.)
- New Plan for detecting Simulated Deafness: Unconscious Movements of Attention on the part of the Simulator. By M. Gellé. (*Gazette Médicale de Paris*, February 24.)
- The Parasites of the External Auditory Meatus. By Dr. Trautman. (*Berliner Klinische Wochenschrift*, February 19.)
- On the Occurrence of Vesicles with Hemorrhagic Exudation in the External Auditory Meatus and in the Tympanic Membrane. By Dr. A. Bing. (*Wiener Medizin. Wochenschrift*, February 24, 1877.)

### PSYCHOLOGY.

TAQUET ON THE INFLUENCE OF COLOURED LIGHT IN THE TREATMENT OF INSANITY.—In January 1876, Dr. Ponza reported to his colleagues in the speciality "for the honour of science and the benefit of suffering humanity," a new treatment of mental diseases by coloured light. This discovery was hailed as a happy event by the press and the public. Dr. Taquet (*Annales Médico-Psychologiques*, Nov. 1876) was pressed to give the new treatment a trial. He entered into the investigation perfectly unbiased, and simply recorded his observations. Blue light being considered by Dr. Ponza to have a direct physiological action upon the mind and optic nerves, Dr. Taquet naturally commenced his experiments by the study of the influence of that colour upon maniacal excitement, promising afterwards to

try the influence of red and violet, if a satisfactory result were arrived at in any case. The chamber used was situated on the first floor, facing south; rays of light penetrated a blue glass window, and were reflected from a blue floor on to blue walls. A glass door of the same tint helped to keep the room flooded with blue light. The first patient submitted to examination was in the first stage of general paralysis, with acute maniacal excitement of so severe a character as to require his being restrained upon his bed. For three hours he remained in the room without the slightest tendency to quietude; the light seemed to fatigue him. The eyelids remained closed during the whole of the experiment. His temperature did not vary. The following day the same patient was placed under the same circumstances, but with a negative result.

The second case was one of acute mania, with refusal of food; and, after the same treatment, the same negative result was arrived at.

A large number of other cases were brought under the influence of the blue light for varying periods, but without any effect. A hysterical patient said, on coming out of the room after several hours treatment, "How very strange that blue room is!" But no other effect was observed in her. Dr. Taquet says that Dr. Ponza is right in saying that blue light produces a sensation of strange oppression with slight vertigo, and a certain fatigue, which never does more than tend to produce light slumber. The medical superintendent of the Moscow Asylum, who has tried this new treatment, states that he has not met with any success. CHARLES ALDRIDGE, M.D.

WITTICH ON THE TREATMENT OF SLEEPLESSNESS CONNECTED WITH EXCITEMENT IN MALE LUNATICS.—In a paper reported in the *Zeitschrift für Psychiatrie* (Bd. 33, Heft 2), Dr. Wittich advocates two modes of treatment for the above form of insomnia. The first of these is the administration of bromide of potassium in doses of from six to nine grammes (about one and a half to two and a half drachms) in the twenty-four hours. This treatment is specially applicable to cases in which the symptoms appear to arise from hyperæmia of the brain. The other methods employed, which is most useful when anæmia of the brain is present, is giving the patient one or two quarts of beer in the evening. Tables which have been kept in the Heppenheim Asylum show that these two plans of treatment have yielded results almost equal to those of chloralhydrate and the subcutaneous injection of morphia. In a considerable number of cases, moreover, where the last-mentioned drugs had failed, sleep was obtained by one of the methods mentioned above.

CHAS. S. W. COBBOLD, M.D.

ATKINS ON THE MORBID CHANGES IN THE NERVE-ELEMENTS OF THE BRAINS OF THE INSANE.—Dr. Ringrose Atkins, of Cork, summarises briefly our present knowledge of the above subject (*Dublin Journal of Medical Science*, January.) After referring to the elementary histology of the cortex, Dr. Atkins embraces under three heads the morbid changes he observed in insanity, affecting—1st, the nerve-cells; 2nd, the neuroglia; 3rd, the nerve-fibres. With regard to the former, the writer first alludes to the fuscous degeneration, and apparently does not hesitate to regard it as identical in its nature with the fatty degeneration of Blandford, and the granular degeneration of Major. The stages of pathogenesis are grouped under the heads of infiltra-



tion, precipitation, and disintegration. The chemical nature of the change is regarded as pigmentary rather than fatty. To the pathology of simple atrophy Dr. Atkins adds nothing fresh, and he does not appear to appreciate the fact that the so-called "giant-cells" are found, when searched for, in all brains. Under the morbid changes of the neuroglia, the coarse fibrillar appearance seen often in epilepsy is regarded as a form of sclerosis. Disseminated and miliary sclerosis are then dealt with, and the presence of colloid and amyloid bodies referred to. With regard to the nerve-fibres, Dr. Atkins appears dubious upon the significance of appearance, which (from his description) must be regarded as the varicose condition artificially produced, and which certainly does not approach the description of Mr. Hamilton's artificially induced myelitis. BEVAN LEWIS.

## FORENSIC MEDICINE.

LAFARGUE ON PERSISTENCE OF LIFE IN A NEW-BORN CHILD FOUND IN THE SOIL OF A PRIVY.—We frequently hear of cases of alleged child-murder, in which it is suggested in defence that the woman was delivered unconsciously while at a privy, and that the child dropped from her and was suffocated in the soil. Under such circumstances, it is not likely that the child, even if born alive, would continue to live.

A remarkable case, showing the continuance of life for twenty-six hours under these adverse circumstances, has been recently reported by Dr. Lafargue, (*Journal de Médecine et de Chirurgie Pratiques*, Feb. 1877). A woman, aged 21, was tried for child-murder at the Assizes for the Gironde. In her defence she stated that she was in the eighth month of her first pregnancy, when she was seized with severe pains, and some hours afterwards she went to the privy. While sitting there, she was suddenly delivered, and the child fell from her into the receptacle. It cried; she tried to raise it by pulling the umbilical cord, but this broke, and the child fell into the soil below. The woman was at once arrested, but the privy was not examined until the following day. The soil was removed, and the child was then found still living, although twenty-six hours had elapsed since the delivery of the woman. It appears that there were some fissures in the floor of the privy which had allowed the fluid part of the soil to escape. The child thus escaped drowning by its body being supported on the solid faecal matter.

When the child was recovered, its skin presented a violet colour. It vomited some glairy feculent matter. The umbilical cord was tied, and artificial warmth was applied, but the child died in a few hours after its removal.

It is certainly remarkable that a child born at the eighth month should have possessed such a tenacity of life as to live twenty-six hours in such a situation, with a noxious atmosphere around it, and the umbilical cord not tied. A question arose whether its life might not have been saved by an earlier removal of the body. The jury were strongly impressed with this belief, and acquitted the woman.

Such a case as this must be regarded as exceptional. Even although there was no fluid soil to produce the usual effects of drowning, it is strange that the child could have breathed an impure atmo-

sphere for so many hours without fatal consequences. Mere exposure for so long a period would generally suffice to destroy the life of a new-born child.

A. S. TAYLOR, M.D.

## MEDICAL CHEMISTRY.

BOUCHARD AND CADIER ON THE DISCOVERY AND ESTIMATION OF ALKALOIDS IN URINE.—In a paper read at the *Société de Biologie* and published in the *Gazette Médicale de Paris*, Dec. 1876, MM. Bouchard and Cadier detail a method for the above processes, based on the known property of the double iodide of mercury and potassium of precipitating alkaloids in aqueous solutions.

The test solution of mercuric chloride and potassium iodide, with an excess of the latter, must be strongly acidified with acetic acid: it throws down from an aqueous solution of alkaloid a white or yellowish precipitate, consisting of the double iodide of mercury and the alkaloid, which does not disappear in an excess of the test solution, increases by cold, dissolves by heat to reappear on cooling, and disappears also by the addition of a little alcohol.

In this way can be detected a third part of a milligramme of quinine in a litre, and a still smaller quantity of strychnine. The test is less sensitive to morphia, failing to precipitate it in a solution of 1 in 1000.

The same reactions occur in urinous solutions, though the test is somewhat less sensitive than in water.

It is necessary for the efficiency of this test to note the following. 1. A sufficient excess of potassium iodide must be added, otherwise a precipitate of mercuric iodide might be thrown down in normal urine. This point can be ascertained by trying the test in normal urine. 2. The mixture *must* be acid, therefore very alkaline urine should be acidified before the addition of the test. 3. Mucin may be precipitated by the acetic acid, but this takes place slowly instead of at once, and, unlike the uniformly distributed precipitate of the alkaloid, masses itself at the bottom of the vessel, and does not disappear by heat or alcohol. 4. In neutral or slightly acid urine loaded with urates, a precipitate very like that of the alkaloid may be formed, but it does not dissolve in a small quantity of alcohol. 5. In albuminous urine a white precipitate occurs, but it does not disappear by heat or alcohol.

In cases where the urine is loaded with urates, it must be strongly acidified, to set free the uric acid; and albuminous urine must be boiled and filtered.

The quantitative estimation of the alkaloids in urine is exemplified in the case of sulphate of quinine. It is found that in a solution consisting of 100 cubic centimetres of distilled water and 2 cubic centimetres of the test, the smallest quantity of sulphate of quinine, which will produce the characteristic opaline fluorescent appearance, is 0.06 of a milligramme. On this appreciation of tint by the eye the test depends in the case of the other alkaloids.

HORATIO DONKIN, M.B.

## RECENT PAPERS.

Poisoning by Irrespirable Gases evolved in the Explosion of Dynamite. By Dr. Senft. (*Bertiner Klinische Wochenschrift*, February 26.)

## REPORTS OF FOREIGN SOCIETIES.

### IMPERIAL ROYAL MEDICAL SOCIETY OF VIENNA.

January 12, 1877. *Dressing of Operation-Wounds.*—Dr. von Dumreicher showed two patients, in whose cases he had employed the method of dressing wounds after operation usually followed in his clinic. The wound is covered with an eight per cent. paste of chloride of zinc, over which is applied waxed paper, the whole being secured by a bandage; and healing by the first intention takes place in a few days.

*Mixed Tumour.*—Dr. von Dumreicher showed a tumour which he had removed a few days previously from a man's thumb. It was as large as a fist, and on examination was found to be an enchondroma, with myxoma in some parts.

*Resection of Nerves.*—Dr. Weinlechner described the results in his practice of resection of the trigeminus nerve, in order to institute a comparison with the results of ligature of the carotid artery. Having related twenty cases in which he had performed resection on account of severe neuralgia, and described the method of operation followed, he said that he had arrived at the following conclusions. In limited neuralgia, a better result is to be expected from resection of the nerve than when the disease is more extensive. The more deeply towards the centre the resection is made, the more certainly is the neuralgia overcome; but if the section be made very deeply, it becomes impossible to repeat the operation if a return of the neuralgia should render this necessary. If the results of resection of the nerve be compared with those of ligature of the carotid, it must be said that in especially obstinate and painful cases both proceedings may produce temporary or complete cure. Neither method is free from the danger of erysipelas, pyæmia, &c. In general, ligature of the carotid is an easier operation than division of the nerve. In old persons who have atheromatous degeneration of the arteries, and in young ones in whom there has been hæmorrhage, ligature of the carotid leads to serious interference with the circulation in the brain; and therefore should not be performed in these circumstances.

*Obliteration of the Right Innominate Vein.*—Dr. Chiari showed a specimen illustrating obliteration of this vein by a mediastinal tumour.

January 19. *A Case of Adhesion of the Heart to the Pericardium.*—Dr. N. Weiss had observed the case in Dr. Bamberger's clinic. He afterwards learned that the patient, who was 19 years old, had two years previously suffered from swelling in the region of the liver, which was followed by severe dyspnoea, for the relief of which paracentesis was performed four times. When admitted on May 5, 1875, the patient presented the following conditions: enormous accumulation of fluid in the abdominal cavity, pushing up the diaphragm; general cyanosis; enlarged liver; slight icterus. Twenty-two litres of a clear serous fluid having been removed by tapping, it was ascertained beyond doubt that the above mentioned symptoms were due to interstitial hepatitis; there was also moderate enlargement of the spleen. At the same time, the general cyanosis, which was supposed to be due to the pushing up of the diaphragm, still continued, even though there was no

further collection of ascitic fluid. Dr. Weiss arrived at the conclusion that the case was one of general cyanosis followed by a high degree of ascites, not preceded by œdema of the lower extremities. As then the idea that the ascites arose from a disturbance of the portal circulation was untenable, it followed that the early appearance of the dropsy was to be attributed to disease of the heart; the peritoneum being placed in conditions, when its veins became congested, more favourable to exudation of liquor sanguinis than the other parts of the body, even though the pressure on the latter was greater. This signified nothing else than that there was chronic inflammation of the peritoneum, which, on the one hand, leading to adhesions, prevented the further accumulation of ascitic fluid, and on the other hand gave rise to the colicky pains during digestion and defecation from which the patient suffered. Dr. Weiss regarded the heart-disease as consisting of adhesion of the heart to the pericardium, and was confirmed in this opinion by the almost complete absence of cardiac symptoms, by the possibility of excluding fatty degeneration of the heart, and by the observation of a previous case in which similar symptoms attended pericardial adhesion and chronic peritonitis. The further course of the case confirmed this opinion. Any exertion on the part of the patient, so as to disturb the circulation, produced enormous œdematous swelling of the lower extremities, of the sexual organs, and of the abdominal wall, but never ascites. The general cyanosis, as well as the enlargement of the liver and spleen, remained unchanged. During the whole progress of the case, the urine was free from albumen.

*Needles in the Lung and Liver.*—Dr. Heschl related the history of a girl who, while sleeping in the sitting position ten years ago, fell forward, and, on awaking, felt severe pain in the left side of the chest, above the breast. A large sewing needle had entered the part. There was no bleeding, and she took no further notice of the affair. Soon, however, swelling and great pain set in, and after ten days she was admitted with pyopneumothorax into hospital, where she remained many months. The pus was removed by thoracentesis. The patient recovered, married, and had three children. A year ago, dropsy appeared, and she died in Dr. Bamberger's clinic, of Bright's disease. During the ten years, she had on many occasions applied to medical men to remove the needle, to which she attributed the curvature of the spine produced by the pleurisy, the renal disease, &c. At the necropsy, in separating the left lung from the pleura, the knife encountered a hard body, which was found to be a piece of needle, a centimetre (0.4 inch) long, which had penetrated the first intercostal space. Lower down, another piece of needle two centimetres (0.8 inch) long was found; and in the liver were two pieces of needle, one being an inch-and-a-half long. It was thus evident that two needles had penetrated the body and been broken, the points entering the lungs, and the other portions the liver.

*The Influence of the Sympathetic Nerve on the Circulation in the Retina.*—Dr. S. Klein described experiments which he had made, in conjunction with Dr. Svetlin, on rabbits and cats, in which animals the cervical sympathetic had been irritated partly by mechanical means and partly by galvanism. It was found that cats were more available for ophthalmoscopic examination than rabbits, though the results obtained in the latter were not without value. Drs. Klein and Svetlin arrived at the conclusion, from their experiments both on animals and on man, that



neither the irritation of the sympathetic by an electric current, nor the removal of the superior cervical ganglion, had any influence on the amount of blood in the vessels of the retina and optic nerve.

### MEDICAL SOCIETY OF BERLIN.

November 8, 1876. *On a Peculiar Appearance of the Blood.*—Dr. M. Litten described the appearances found in the blood of an anæmic emaciated man, aged 20, who had suffered from enlarged masses of abdominal glands, reaching on each side of the spine from the diaphragm to below the promontory of the sacrum. The swelling might be regarded as lymphosarcoma; but the presence of cough with expectoration and profuse diarrhoea pointed to phthisis. Microscopic examination detected a diminution of the red corpuscles, which did not form rouleaux. The white corpuscles were large, and had a hyaline outline, which sent processes into the interior; they contained granules and nuclei. These appearances remained constant for a long time. The abdominal and pulmonary symptoms increased, and a considerable excretion of indican took place, as a result of irritation of the peritoneum. Five days before death oedema of the lung set in, rendering venesection necessary. On examining with the microscope the last drops of blood which flowed, a remarkable appearance was found. Very small red molecules were seen, which exhibited active movements; no appearance of processes could be detected. Among these were found red corpuscles of ordinary form and size, and some large discs. On examining the blood an hour later it was found to be normal; and it remained so until death. At the necropsy pulmonary and abdominal phthisis was found, with miliary tubercles. There was nothing remarkable in the marrow of the bones; but the femur contained a reddish-brown gelatinous mass, such as is often seen in anæmic conditions; there was red atrophy of the liver. Dr. Litten first thought that the appearance of the blood was due to *ante mortem* destruction. But against this there was the fact that the blood regained its normal appearance six days before death. It could not be attributed to the pulmonary oedema, since it was not found in other cases of oedema. Max Schultze has described a breaking up of the corpuscles at a temperature of 52 cent. (125.6 Fahr.); but this temperature is not reached in the human body. Similar appearances are observed in pernicious anæmia; and microcytes are found in diseases attended with subcutaneous extravasation, such as scurvy. Hayem has found them in chronic anæmia, but not in such a marked form as in the present case.—Dr. O. Simon said that, in examining blood in a fatal case of burn, he found a number of minute corpuscles in active motion.

*Treatment of Atony of the Bladder.*—Dr. Von Langenbeck, referring to the atony of the bladder with enlarged prostate, common in old persons, said that he had derived excellent results in three cases from the hypodermic injection of ergotin. In all the cases the contractile power of the urine was increased, so that the patients voided more urine; and, after some days, the improvement was so great that only a small quantity of urine was left in the bladder. The last patient was a man aged 62, who passed little more than an ounce of urine three or four times daily; but more than half a litre was drawn off by the catheter. An injection of 12 centigrammes (2 grains) of extract of ergot was made. On the same day the patient could already urinate better, and the hypertrophy of

the prostate distinctly diminished. After four injections the atony of the bladder was overcome. Herr Langenbeck could not ascribe this result to the other remedies employed—application of ointment of iodide of potassium to the rectum and perinæum.—Dr. Israel had met with a case in the Jewish hospital, in which marked relief was afforded by injections of ergotin in a case of vesical catarrh and hypertrophy of the prostate. The patient was able to retain his urine three hours, whereas previously he had felt the desire to micturate every ten minutes. No other treatment was employed. The action of the remedy was to be explained either by its influence on the muscular coat of the bladder, or by contraction of the vascular plexus surrounding the prostate.

November 15. *Some Observations on Scarlet Fever.*—Dr. Henoch brought forward for discussion some points regarding scarlet fever, *à propos* of the prevailing epidemic. There was a great tendency to connect malignity of the disease entirely with high temperature; but this view was only partially correct, with regard especially to the sensorial phenomena, since these frequently appeared in a very threatening form from the beginning, and were frequently entirely absent in other diseases attended with a great and long-continued increase of temperature, such as typhus. In most cases, the cause of the malignity was rather to be ascribed to the specific action of the scarlatinal poison, which affected the nervous system, and along with it the heart. Albuminuria was, probably, in many cases the result of venous stasis in the kidneys arising from weakness of the heart. The scarlatinal poison had, also, a remarkable tendency to produce necrotising (so-called diphtheritic) inflammations on certain mucous surfaces. These inflammations must be distinguished from the so-called diphtheria, which depended on a specific injection, and might occasionally occur in combination with scarlatina, especially in hospitals. In order to avoid misconception, Dr. Henoch was in favour of denoting so-called diphtheria by another name, such as *synanche contagiosa*, suggested by Senator. An unfavourable prognostic symptom, of not unfrequent occurrence, in severe cases of scarlet fever, was obstinate diarrhoea, which was found, on *post mortem* examination, not to depend on intestinal catarrh, but on swelling of the Peyerian and solitary glands. As regarded treatment in cases attended with high temperature, the apparently malignant symptoms were to be met by antipyretic remedies; but he would warn against the excessive use of cool or cold baths, the results of which were by no means satisfactory. Collapse occurred much more readily in this disease than in typhus. He preferred lukewarm baths, at a temperature of 25 or 26 Reaumur (88.25 or 90 Fahr.). The use of antipyretic remedies, especially salicylic acid, also demanded great caution, on account of the liability to collapse. In the specially malignant cases, treatment was absolutely powerless after a certain degree of infection had been reached. In cases of moderate severity abundant quantities of wine and coffee, and camphor, were useful. Camphor was best administered subcutaneously in cases attended with severe dysphagia; its stimulant action being increased by solution in spirit of wine, which, however, should be diluted with an equal part of water to avoid inflammation and sloughing of the skin. There was great variety in the opinions as to the anatomical conditions of the affection of the kidneys. The amount of blood in the urine also varied much. Both the so-called hemorrhagic and the non-hemorrhagic forms of scarlatina might pass through their course

without fever or any complication. The treatment in both forms was nearly the same. Purgatives were first to be given unless diarrhoea were already present; then acetate of potash, with which Dr. Henoch generally gave Wildungen water. Under this treatment many cases run a favourable course in from eight to fourteen days; otherwise the use of astringents was now commenced, especially ergotin or tannin, and later liquor ferri sesquichloridi, which latter medicine was also useful in the after-treatment. Dr. Henoch regarded warm baths as of very doubtful value; he had not yet used the hot steam-bath. In the course of nephritis, symptoms of cardiac weakness often appeared, slowness or irregularity of the pulse, without special symptoms of uræmia. In a case of this kind Dr. Henoch had observed a systolic murmur at the apex of the heart, lasting, however, for one day only.—Dr. Nathanson referred to the concurrence of epidemics of scarlatina and puerperal fever. He had observed epidemics of both diseases prevailing together at their height, and had also found that during a scarlatinal epidemic parturient women were especially liable to puerperal fever. Both diseases had certain symptoms in common, such as the unusual frequency of pulse, and tendency to necrotic processes.—Dr. Wiss said that the acute exanthemata generally occurred in a more severe form in the United States than in Europe. This was stated during the Congress in Philadelphia, and agreed with his observation during thirteen years' practice in America. The malignant form of scarlatina, known as "typhoid," was frequently met with; it usually ran its course without inflammation and sloughing of the neck. In these cases, infusion of chinchona was given in the early stages with the best results. As a remedy for the dropsy, digitalis and juniper-berries were useful.—Dr. A. Baginsky agreed with Dr. Henoch as to the influence of high temperature in scarlet fever. High temperatures were injurious only when they acted long and continuously on the organism: hence the generally slight importance of the hot stage of intermittent fever. The cases of malignant scarlatina in children, who frequently, after vomiting once, sank into a state of somnolence or complete unconsciousness, and died, gave the impression of a deadly poisoning. He could not agree with Dr. Henoch that the scarlatinal poison acted with special intensity on the heart. The assemblage of symptoms of paralysis of the heart was not complete in children. There were, indeed, cases in which the pulse was quick and the arterial tension much lowered; but there were also others in which, though the tension appeared good, the children gradually sank. In the second place, the pathognomonic sign of fatal cardiac weakness was wanting; namely, absence of the second sound, which was a striking symptom in cholera. Again, notwithstanding the extreme impairment of the heart's action, the sensorium was but slightly implicated in cholera, even up to the last breath; while in scarlatina the intense implication of the sensorium came prominently into the foreground. On the whole, Dr. Baginsky would hesitate to admit that the scarlatinal poison acted specially on the heart; he believed rather that it acted through the blood on all the organs, and not least on the nervous system. On looking at the history of epidemics of scarlet fever, it would be seen that two courses had been followed in the treatment. One group of physicians treated scarlet fever antiphlogistically with mild cooling remedies, while another considered the early use of stimulants necessary. Historical evidence showed that the former distinctly had the better results; and

they went so far as to assert that the malignity of scarlatina was called into act by the stimulant treatment. While this must be regarded as an exaggeration, it could not be denied that a mildly cooling, not too energetic treatment—the Hippocratic method of treating scarlet fever as followed since the time of Sydenham—was the most successful. Dr. Baginsky attached much importance to treatment through the skin, the principal organ by which the scarlatinal poison was eliminated. In children, he used from the first baths; varying the temperature somewhat according to the body-heat, but never specially endeavouring to obtain an energetic anti-febrile action. The temperature which he used was never lower than 22 or 23 Reaumur (81.8 to 82.4 Fahr.). After the bath, the children were enveloped in a linen cloth, allowed to lie down lightly covered, and, after about an hour, rubbed with bacon over the whole body. This method of treatment, which was, indeed, not new, but was a combination of the lukewarm bath with Schneeman's bacon inunction, effected everything that could be done with regard to the skin. The result was the saving of a large number of cases of petechial scarlatina in which, he was convinced, death would otherwise have occurred. He did not profess to have thus cut short the course of malignant scarlet fever, or to have entirely averted malignant complications, for these occurred in some cases in spite of all the diligence with which the cutaneous treatment was carried out; but, on the whole, he was convinced that the course of the disease had been rendered more favourable, and the mortality less, than before. One result of this treatment was the prevention of protracted desquamation; the only indication of this was some roughness of the skin, with, in many cases, branny scales; large masses of epidermis were never thrown off. He had also found, that when baths, at a temperature of 27 or 28 Reaumur (92.75 to 95 Fahr.), were used, after the reduction of the fever, the dropsy was not so severe as in previous cases, notwithstanding the occurrence of albuminuria. If, in the further course of the case, slight cutaneous transpiration were allowed after the use of the bath, and the child's body were then dried and rubbed with bacon, there was generally slight œdema, and the secretion of a little fluid in the cavities of the body, but never actual dropsy. Dr. Baginsky had never seen any result from the bath in cases of nephritis; but he had not found it to act injuriously. Tannic acid he regarded as a dangerous remedy in some cases, especially in the early stage; he had often seen intense hæmaturia follow its use. Diuretics were useful at a certain point in scarlet fever, but it was difficult to determine the right time for their administration. If the urine were scanty, but fairly clear, containing much albumen with an abundance of fatty granules, and only a few red corpuscles, and if the child were pale and there was considerable œdema, the cautious use of diuretics was indicated. Dr. Baginsky had become convinced of their utility by a case in which inunction and baths failed to give relief, while under the use of juniper berries—taken in Dr. Baginsky's absence, and against his orders—the urine became abundant, and the œdema rapidly disappeared. He regarded icterus as one of the most unfavourable complications of scarlet fever, especially when nephritis was already present. When it was remembered that Nothnagel had found cylinders in the urine in icterus, and that the elimination of pigment by the kidneys must disturb the circulation in them and the secretion of urine, it would be easily perceived that the combination of nephritis and icterus must be very



injurious. In a case of this kind, he had seen absolute suppression of urine for three days, and was at last obliged to use diuretics (juniper berries). The child recovered; the symptoms of uræmia were but slight.—Dr. Senator asked what observations Dr. Henoch had made on the treatment of the throat-affection in scarlet fever. It seemed to him that the confusion in the writings of various authors as to the use of local treatment, depended in part on the fact that, as Dr. Henoch had stated, the throat-affection in scarlatina had been regarded as the same with that which he called synanche. In the latter, however, the tendency of the disease was to extend to the larynx; while, according to Dr. Henoch, this very rarely occurred in scarlet fever. In the former, he was opposed to the use of all energetic stimulants or caustic treatment. As regarded the nephritis, he had used acetate of potash, with or without digitalis, in the earliest stages with benefit. The action of the acetate was partly to be explained by its change within the body into carbonate of the alkali, which rendered the urine neutral or alkaline, so that it dissolved out the cylinders of albumen and discharged epithelium, which blocked up the uriniferous tubules. He had repeatedly seen such remarkably good effects from the use of warm and hot baths, even when uræmia had set in, that he could not abandon their use.—Dr. Henoch said that he had spoken of stimulant treatment only in malignant cases. In the throat-affection of scarlet fever, as well as in diphtheria or synanche, he used inhalations or irrigations of a two-per-cent. solution of carbolic acid or similar remedies. He did not regard scarlet fever and puerperal fever as interchangeable. The greater disposition of lying-in women to scarlet fever was to be attributed to the presence of the uterine wound. An otherwise healthy lying-in woman got scarlet fever during an epidemic of the disease, but not puerperal fever.—Dr. Nathanson could not agree with the last observation, as in his experience, during an epidemic of scarlet fever, most of the lying-in women had puerperal fever.—Dr. Von Langenbeck asked whether gangrene was often observed in scarlet fever. He had met with three cases. In one, which he saw in Kiel, there was gangrene of the ends of the fingers, and death occurred in twenty-four hours; in the second, mortification of the top of the nose was said to have followed scarlet fever; and the third case was seen by him with Schönlein, in a boy aged 10, in whom, after an ordinary attack of scarlatina, gangrene of the eye-lids and feet suddenly appeared; Schönlein had not seen a similar case.—Dr. Henoch had seen one case of bed-sores and one of gangrene of the *alæ nasi*; both recovered.—Dr. Seligsohn had, in 1868, seen a case of perforation of the hard palate after scarlatina. Dr. Wilms, who saw the patient with him, told him that he had met with a similar case a short time previously.—Dr. Simon had seen a case of sloughing of the scrotum after scarlatina; it ended in recovery.

#### ACADEMY OF MEDICINE IN PARIS.

Jan. 26, 1877. *Spondylizema and Spondylolisthesis*.—M. Depaul read for a committee, composed of MM. Hertz, Jacquemier, and Depaul, a report on a memoir by M. Herrgott, of Nancy, entitled "*Spondylizema, or giving way of the vertebræ*," a new cause of pelvic change, compared to spondylolisthesis, or slipping of the vertebræ, discovered in a certain number of pelves, of which the peculiar form is the

result of Pott's disease. This community of origin has, up to this time, caused them to be mixed up under one denomination. M. Herrgott has made a complete study of them, which will be found, with all its details, in his interesting memoir; and he has applied himself to demonstrate the necessity of dividing them into two categories and to describe their separate leading characteristics. The most important points which he has formulated are these.

1. Diseases of the lumbar spine and of the sacrum may bring on two essentially different deformities, according as the caries attacks the bodies or the arches of the vertebræ.
2. In the first, in which the body of the vertebra is destroyed, the spine sinks in upon itself and inclines forward. This inclination may bring on so considerable a projection forward, as to cover the brim of the pelvis, and to prevent the entrance of the foetus. This is the lesion named *spondylizema* or giving way of the vertebræ.
3. In the second, in which the vertebral arch, which keeps up the column by its intervertebral articulations and the apophyses, in which are inserted the ligaments and muscles of the region is affected, the column, obeying the law of gravity, slips forward into the pelvic cavity and obstructs it; to this lesion, Kilian has given the name of *spondylolisthesis* (vertebral slipping).
4. In *spondylizema*, the sacro-pubic diameter retains its normal length; it may be increased, in consequence of the diminution of the height of the base of the sacrum, but the outlet, which the foetus has to pass, is removed higher up; it is constituted by a line extending from the pubes to the body of one of the lumbar or dorsal vertebræ, brought near to the pubes by the forward inclination of the column.
5. In *spondylolisthesis*, the sacro-pubic diameter is narrowed by the interposition of the bodies of the vertebræ between the sacrum and the pubes, in consequence of their slipping into the pelvic canal in front of the sacrum.
6. The consequences of the latter lesion are more serious than that of the first, but the two may, as has been seen, lead to the most distressing necessities of obstetrical surgery. Amongst the *spondylolisthetic* pelves, may be ranked those from Prague, Paderborn, Zürich, Halle, and Munich, and the two of which Professor Weber-Ohenhof has given a description. On the contrary, the two pelves of Olshausen, those of Dr. Stolz, Belloc, and Fehling, and more especially the Brussels one, are, according to M. Herrgott's classification, clearly *spondylizematic*. M. Depaul afterwards showed to the meeting, and gave a description of, a *spondylizematic* pelvis obtained at the hospital by M. B. Anger. It is, no doubt, as M. Blot pointed out, to be regretted that M. Herrgott has not deduced any practical data from his researches; gratitude, however, is due to him for having collected, in an available form, these facts, the majority of which are scattered throughout foreign medical literature.—M. Jules Guérin was of opinion that the special form on which this monograph is based is simply an accident, a special case of an important category of tuberculous deformities of the sacral and lumbar regions, all likely, more or less, to exercise influence over the form, direction, and dimensions of the outlets of the pelvis; that there are no grounds for placing apart, as distinct changes, the two faults of conformation which have been treated of; and that, in fine, it would have been preferable to study the general aspect of the cases, so as to comprise them all in a higher generalisation.

Jan. 30. At the last meeting, M. Jules Guérin undertook to show to the Academy some prepara-

tions in support of the reservations he had made with regard to M. Herrgott's memoir. The result was a resumption of the argument between him and M. Depaul. The same propositions were again brought forward, with considerable warmth; the one disputant continuing to demand that the question should be extended to the generality of facts, resulting from the lesion of the vertebral column in tuberculosis; the other persisting in looking at M. Herrgott's work from the obstetrical point of view only.

Feb. 6, 1877. *Flexion and Lateral Inclination Movements of the Vertebral Column*.—M. Jules Guérin read the second part of his memoir on this subject (see LONDON MEDICAL RECORD, Nov. 15, 1876). In the first part, the author had brought under notice three centres of movement; at the junction of the cervical with the dorsal region; at that of the dorsal with the lumbar region; at that of the lumbar region with the sacrum. There was the most perfect concordance between these movements and the articulations and muscles. In the same way as the action of certain muscles, which are not met with in the other regions of the spine, correspond with the three central points, so the central articulations are endowed with special dispositions favourable to the movements of which they are the seat; such are the peculiar mode of junction of the bodies of the vertebræ, the transverse direction of the articular apophyses, etc. If the other vertebræ are provided with them, it is only to a certain extent, and according as they participate more or less in the movements. The articulations of the seventh cervical with the first dorsal, of the eleventh and twelfth dorsal, of the fifth lumbar, and of the sacrum, have their special characteristics, sharply defined, corresponding with the movements which are produced in them; the vertebræ of each of these regions of the spine, placed between the three centres of inclination, participate, in a diminishing manner and in an inverse ratio, in the articular peculiarities of the special articulations at the centre of inclination. The latter portion of this second part was devoted to a very detailed study of the atlanto-occipital articulation, considered in its relations with the three movements allowed by the majority of writers, and specially with lateral inclination. Every lateral movement implicates two plane or regularly circular surfaces in the direction of this movement, so that the arcs described may, in their whole extent, be of the same radius. The hemisphere received into a hemispheric cavity of the same radius, completely realises this condition in every way; but, in place of the completely hemispherical form, it suffices that the gliding atlanto-occipital surfaces should, in certain determined situations, be capable of producing an arc of the same radius. The lateral inclination, which is impossible when the head is in the normal position, can be performed when the head is bent. Such are the results of an exhaustive examination of the atlanto-occipital articulation, and of the observations made on the dead body by the author.

*Ulcerations of the Tongue in Whooping-Cough*.—Dr. Delthil, of Nogent-sur-Marne, read a paper on diphtheroid ulceration in whooping-cough; its frequency, significance, and its relations with the disease. This ulceration is not the result of the friction of the tongue on the teeth in the paroxysms of cough, but the primary phenomenon of a general affection, like chancre in syphilis. The author has found it in all parts of the mouth, and twice before dentition. Its extent, duration, and gravity would seem to be in a corresponding ratio with the severity of the disease.

## REVIEWS

*A System of Medicine*. Edited by J. RUSSELL REYNOLDS, M.D. F.R.S. Vol. IV. containing Diseases of the Heart. Pp. 806. London: Macmillan & Co., 1877.

It is not without a feeling of sadness that we turn to review this present volume of the *System of Medicine*, containing so much good work, of authors, two out of the six of whom are beyond the reach of criticism or applause. A brief glance, however, through the contents of the volume, and especially at that portion of it contributed by the late Dr. Sibson, suffices in some measure to excuse, if not fully to justify, the long delay in its publication; and, on a closer scrutiny, we are wonder-stricken at the mass of labour here displayed. The preparation of the elaborate tables of this author on Pericarditis, and the correction of such complicated proofs, was no doubt the principal cause of the tardy appearance of the book. We cannot, indeed, characterise these tables in any better way than as constituting an etiological and symptomatic "Bradshaw"; but, instead of recording hours and minutes, they are statistics of the intricate phenomena of disease. Although the facts and observations here recorded are in a great measure beyond criticism, one cannot fail to perceive with what infinite care and labour they have been gathered, and what abundant evidence they bear of the truthful accuracy of the mind that collected and arranged them. We are, perhaps, here and there tempted to remark something fanciful in the elaborateness of arrangement and of symbols used. Outlines of coffins, variously directed arrow-heads, alone and in combination, and wavy and firm lines of different colours, with innumerable figures, have a tendency to damp the ardour of the student who would wish seriously to scrutinise these tables. But one must not grudgingly devote some unusual attention to the consideration of *data* which an author has at such pains represented in a condensed form. Doubtless it would now be a comparatively easy task to "A B C" the information here represented, and this, indeed, is partly done by abstracts summarised from some of the tables.

Some points respecting the natural history of Pericarditis in acute rheumatism come out from these tables, that, we think, are not in accordance with views generally entertained. For instance, of 63 cases of rheumatic pericarditis, in 9 cases only was the disease uncomplicated with endocarditis. Then, again, the tables, pp. 199 and 203, shew a very direct relationship between the severity of the joint-affection and the occurrence of both peri- and endocarditis. The graver the joint-affection, the more likely is the pericardium to be involved. The great frequency with which female domestic servants are afflicted with acute rheumatism, and their special liability to cardiac complication, are also strikingly illustrated. Indeed, the author shows that acute rheumatism is the most common of the serious diseases to which servants, and especially those under twenty-one years of age, are liable; and that, when so attacked, three-fifths of them have heart-complication, in one-fifth of the number the pericardium being involved. Taking into account the cases in which cardiac disease was either "threatened or probable," to which anomalous class the author devotes a separate column in his tables, only 3 out of 57 girls attacked below the age of 21 escaped. This peculiar liability of servant-



girls to rheumatic fever and heart-disease is traced to their great exposure to draughts, and to the increasing strain upon the joints of their as yet not matured frames, arising from long hours on the feet, more or less heavy stair-work, and kneeling often on damp floors or stones. Further on, at page 221, the author observes that these young girls are for the most part first attacked in the ankles and knees, the joints bearing the greatest strain. The same general result comes out with respect to males; indoor servants under the age of 21 being much more liable to rheumatism with heart-complication than others. In men of mature age also, hard work seems to predispose to pericarditis if they get rheumatism.

Dr. Sibson is disposed to generalising upon these *data*, and finds further evidence to show that these joints are first attacked which are most concerned in bearing the strain of work. He believes also that the already noticed predisposition of cases with severe joint-affection to become complicated with pericarditis, may arise "from excessive labour or even tumultuous action of the heart," called forth by the severe joint-affection. We are left to infer that the pain of the joint-affection is largely concerned in "calling forth" the increased action of the heart. "Under the combined influence then of exposure, room-work, rheumatic inflammation is set up in the joints, and under the combined influence of the disease thus established, and over-work of the heart, rheumatic inflammation is established in that organ." Pericarditis is, however, in rheumatism, almost always associated with endocarditis, and the latter lesion is usually more severe than when not thus complicated; and although the author holds to the above expressed view, it does not, of course, escape him that all the graver lesions may be in common due to a greater virulence of the general disease.

In another table or rather set of tables, 326 cases of acute rheumatism are arranged, shewing the proportion in which *pain* was present in the region of the heart, in the side, and in the chest. The author, amongst other conclusions, comes to the opinion that pain over the region of the heart, increased or induced by pressure, may, with an approach to certainty, be attributed to inflammation of the pleura. We fail quite to see how he arrives at this view: the facts in the tables (p. 229) would appear to go against its validity. Pain was present over the region of the heart in 30 per cent. of the cases of simple endocarditis, in 87.5 per cent. of peri- and endocarditis. In not any of these latter cases is mention made of pleuritic friction having been heard, and in the former group (simple endocarditis), no pleurisy was likely to be present. Also, in speaking of pain arising from pressure over the epigastrium as a common sign in pericarditis, which he admits to be due to inflammation of the pericardial surface of the central tendon, the author remarks on the unfrequency with which the pericardial inflammation extends through the diaphragm to the peritoneal surface. And similarly, in the absence of proof to the contrary, we are loth to accept the statement that in such a large proportion of cases it extends through to the pulmonary surface of the pericardium.

Cases of acute rheumatism with affection of the nervous system are considered and tabulated with great minuteness; 61 cases are collected in which the temperature had been recorded, of which in 27 there was pericarditis, in 13 simple endocarditis, and in 21 no heart-complication. Out of these cases *hyperpyrexia* was present in 37. Of these the pre-

dominant symptoms were in the majority (22), coma preceded by delirium; in ten cases delirium was alone present. Hyperpyrexia supervened in nearly an equal proportion of each of the group of cases, viz., in three-fifths of the 27 cases of pericarditis, in two-thirds of the 13 cases of endocarditis, and in three-fifths of the 21 cases uncomplicated by heart disease. Yet, the author observes, p. 271, that "When we consider that pericarditis usually attacks only one in every five or six cases of acute rheumatism, we must multiply the cases of pericarditis with hyperpyrexia by five or six if we would make a parallel comparison between those cases with pericarditis and those without it. It would appear from this, that the presence of pericarditis in a case of acute rheumatism increases the chance of hyperpyrexia with delirium, and coma in the proportion of four or five to one."

In discussing further the clinical phenomena to be observed in pericarditis, the author refers to the rapidity with which the effusion of fluid advances to its acme, viz., on an average within three days, remaining at its height for one day, and much more slowly declining in the course of eight more days. (p. 310). The first symptom of pericarditis (p. 312-329 and intervening tables), preceding both friction murmur and increased area of dullness, is *pain*. In the majority of the cases analysed, 16 out of 22, the friction-sound and increased præcordial dullness appeared together; in one case the friction-sound preceded, and in the remaining five case it followed, the onset of increased dullness. We presume, from a reference to his contour lines, that the author is referring to cases examined in the recumbent posture, although no special mention of this point is made. Thus it would appear that pericardial friction-sound is of less clinical value in the early diagnosis of pericarditis than is usually thought; and, on the other hand, the friction-sound, with rare exceptions, persists throughout the period of effusion.

Some interesting observations have been made by the author (pp. 342 and 343) on the diagnosis of adherent pericardium. In this condition he observes the cardiac impulse to be extended in all directions. The walls of the chest in the præcordial region may be either thrust forward during systole and dragged backward during diastole, or *vice versa*. Both sternum and cartilages may be drawn inwards with systole and spring outwards with diastole. But an observation of the effect of deep inspiration upon the area of cardiac impulse is the most important means of diagnosing adherent pericardium. "When the heart is not adherent, a deep inspiration, by drawing down the heart and covering it with the expanded lungs, causes a complete transfer of the impulse from the fourth and fifth spaces to the epigastrium and the sixth and seventh cartilages; but when the heart is adherent, the outspread dragging impulse almost retains its position during a deep inspiration, neither materially lessening its area over its upper border nor increasing it below."

We must only venture to touch upon one more point in this interesting and elaborate article of Dr. Sibson's, viz., the occurrence of pericarditis in Bright's disease. A great number of cases tabulated shows that, while pericarditis is rare (7 per cent.) in the acute (scarlatinal) nephritis of children under 16 years, it is much more frequent (15.4 per cent.) in acute Bright's disease in the adult. On the other hand, of the two chronic forms of kidney-disease affecting the adult, pericarditis is most frequent (1 in 107 *post mortem* cases) in association with the con-

tracted kidney, and very unfrequent (1 in 62 *post mortem* cases) in association with fatty kidney. The author finds hypertrophy of the heart to be present in only about one half of the cases of Bright's disease with pericarditis. But the action of the left ventricle is, he observes, unduly strong in all cases of Bright's disease, whether acute or chronic, "for it has to send the poisoned blood through vessels of great tension that oppose resistance to the onflow of the blood." Hence in every case of Bright's disease, "the left ventricle, whether hypertrophied or not, is beating with undue force; and thus tends, by the pressure of its walls with undue force against the pericardium, to induce pericarditis." This reasoning does not appear to us to be conclusive, for we cannot understand the action of the heart continuing to be unduly strong without hypertrophy (and loss of albumen &c. does not seem sufficient to reconcile the conflicting phenomena of increased action without increased nutrition); and secondly, if the increased action be allowed in all cases of Bright's disease, and serve in some to determine pericarditis, we do not see why it should not do so in all, or at least in a less restricted number.

A somewhat large portion of the volume is taken up with a valuable monograph by Dr. Sibson, on the Position and Form of the Heart and Great Vessels. Perhaps the subject might with advantage have been more briefly treated here, as being one more suitable to a work on Medical Anatomy. Still it is a subject on which the late Dr. Sibson was a great authority; and we cannot regret that the profession should thus be in possession of his latest thoughts and observations upon it.

Dr. Sibson's article on Endocarditis is in keeping with his other articles, but calls for no special remark.

We cannot conclude this first notice of the work before us without expressing our sense of the admirable manner in which it is printed. We think that even Messrs. Macmillan must regard the tables on pericarditis and endocarditis, which are almost entirely without typographical error, as masterpieces of the printer's art.

R. DOUGLAS POWELL, M.D.

*Die Chirurgische Behandlung der Wunden.* (The Surgical Treatment of Wounds.) By IGNAZ NEUDÖRFER. Pp. 159. Vienna. 1877.

The little work before us is most interesting and valuable, as any treatise on a surgical subject from one of Dr. Neudörfer's experience and ingenuity is sure to be; and it derives additional interest as being a formal attack on Prof. Lister's theories by one who has studied the whole question deeply, and who has followed out the antiseptic treatment after Lister's and all other known methods, with good success. The author is a man whose reputation and position, as well as his wide experience of surgery in peace and war, give his opinions a weight that entitles him to be heard, and render it incumbent on Mr. Lister to answer him. And even apart from any such controversy, the question is one which calls for full discussion, and which ought by this time to be ripe for something like a judgment. That question is, whether the theoretical or scientific basis on which Mr. Lister's practice is founded is right or wrong. Many surgeons, like the present reviewer, might be content with knowing that the practice, as far as they follow it, is eminently successful; and think it no disgrace

to confess that they are not sufficiently versed in physical science to judge between the ardent patronage of Professor Tyndall and the weighty attacks of Dr. Bastian. Nor would the attitude of such Laodiceans be disturbed by the present work. Dr. Neudörfer is as ardent an admirer of carbolic acid as Mr. Lister—perhaps even more so. He sneers at many of the "refinements" in the practice, and he denies the germ-theory. But he allows the importance of antiseptics and the virtues of carbolic acid as an antiseptic; he reviews minutely each of the constituents of Lister's dressing, and though he makes light of some of them, he takes no serious objection to any. Nor does he question the success of the method in practice. He makes some personal charges against Mr. Lister, intimating not obscurely his conviction that he has availed himself of Lemaire's researches without acknowledgment, (an intimation which is gratuitous and discourteous, as he quotes Mr. Lister's own disclaimer of having previously read Lemaire's book), and he tries to show that Lemaire had anticipated Lister in every detail of the method. Such questions as these are, however, rather of personal than of scientific or practical interest. We might fairly enough rest content with the conviction derived from our personal experience, that the method recommended by Mr. Lister is very successful even when only its main features are kept in mind; and we should of course feel much satisfaction in noting that a professed antagonist of Lister's views comes to substantially the same conclusion in a book written expressly to submit those views to a searching criticism. But all this is not sufficient for Mr. Lister and his more ardent followers. They reject such "neither hot nor cold" adherents, and tell us that unless we believe the theory, we cannot successfully follow the practice; that the wonders of antiseptic surgery can only be effected by those who believe that a single germ may and often does implant morbid actions, if it can anyhow penetrate into the recesses of a wound, and who are watchful and dexterous enough to oppose at every tiny avenue the ingress of the invisible intruder. It is this deliberate opinion, expressed by a man who has confessedly done so much for the progress of practical surgery, as Mr. Lister has, which gives the question its present significance. There are many students of Mr. Lister's method (among whom the present writer would count himself) who would most gladly believe the whole theory, if belief were a voluntary act, but who cannot see that anything which deserves to be called a proof of it has ever been given; who are not inclined, therefore, to ascribe the incredulity of such men as Dr. Bastian, Dr. Neudörfer, and many other good physicists and surgeons, either to malignity or to stupidity; who are repelled rather than attracted by the extravagancies into which his adoption of the theory has led Dr. Tyndall; who are disturbed by the constant changes which it seems necessary to make in a method which was represented as perfect already; and who seek in vain for some definite proof of so striking a superiority in practice of the antiseptic over the "open" or "unprotected" systems of dressing as ought long ago to have been forthcoming, if it be really true that the atmosphere is loaded with poisonous germs, a single one of which may cost the patient his life, if it be unluckily allowed to slip past an undefended cranny in the dressings. We know that Mr. Lister's views are not shared by some of his colleagues in the same infirmary, as, for instance, Professor Spence. These gentlemen occupy different wards,



and Mr. Spence is industrious in furnishing statistical reports of his practice from time to time. In a Report lately published\* Mr. Spence dwells with satisfaction on the better results which he has obtained from simpler methods, in comparison with those cases in which he has used the antiseptic method.

We are aware that it will be said that Mr. Spence's use of antiseptics was erroneous or limited. But why is it not shown that the practice in Mr. Lister's ward differs strikingly in its success from that obtained in Mr. Spence's? And how can we account for the fact, which cannot be refuted, that Mr. Spence's practice is so eminently successful? Mr. Spence's experience is most exactly in point, since it has been made public property. It relates to the very same hospital, and the very same class of patients and of cases as Mr. Lister's; and it is therefore available at once for a comparison which is as fair as such a comparison can be, and which cannot be to the disadvantage of either surgeon. The merits of both are well known: both have long been familiar with the use of carbolic acid as a dressing (for Mr. Spence appears to have used this dressing almost, if not quite, as early as Mr. Lister, and before any publication of the latter's peculiar method), and the difference is almost reduced to a question between the acceptance or non-acceptance of the germ-theory and its consequences. We use the term "non-acceptance" advisedly, since those who prefer to follow the practice of Spence rather than of Lister need by no means *reject* Pasteur's views. They need only say with the present reviewer that they cannot decide between the two sides, but that they are indebted primarily to Mr. Lister, and next, though in no small measure, to his numerous imitators, and his numerous opponents, for greater insight into the necessary conditions of success in the local treatment of wounds, and that, as far as they have hitherto seen, success does not vary with the acceptance or rejection of the germ-theory. So much as this is conceded to Lister by Dr. Neudörfer himself, who says: "I am confident that in any critical illustration of Lister's teaching and methods I have nowhere overstepped the bounds of politeness and propriety." [As to this, we would reserve our opinion in the single particular hinted at above.] "Lister's greatest merit is, according to my view, of a negative character, and consists in his having got his surgical contemporaries to abstain from their former habits of frequently changing their dressings and fomenting the wounds, or irrigating them with water; and having thus abolished these and other detrimental parts of the treatment of wounds. And this is a merit which is by no means to be lightly appreciated—a much more weighty merit than the invention of the carbolic spray, protective, and so forth" (Preface, page v.) On pp. 115-120, also, in summing up the positive merits of Lister's dressing, though he avows his opinion that the above details are at best useless, and in some respects hurtful, as "leading the credulous surgeon into a false path, and hindering all advance, or rendering it difficult;" yet he shows plainly how very closely his own views coincide with Lister's on all other points except those directly connected with germs; and how well Lister's method fulfils these four conditions which he lays down as the essentials of a good dressing. "1. The exclusion of all possibility of the implantation of any ferment by the hands, clothes, instruments, or utensils of the

surgeon, his assistants, or other attendants; 2. The prevention of all obstruction or fermentation of the secretions of the wound, or the materials used in dressing; 3. The avoidance of every kind of mechanical injury in the dressing or its application, and the least frequent change of dressings possible; 4. The effect of every good dressing will be much assisted by a gentle external pressure on the wound," although, as he adds, all attempts at the hermetic closure of the wound must be injurious.

So on page 63—"I must, however, allow that, taken on the whole, Lister proceeds quite correctly in his dressing, and therefore obtains favourable results in the majority of cases; only he is throughout not clear on the subject of the essentials of a good dressing, and in this obscurity he connects the merit of his dressing with trivialities and minute technicalities, which are really quite indifferent to success."

Thus we may say that the question between Mr. Lister and his opponents seems to be narrowed to this. Everyone allows the reality of the success which may be obtained by the antiseptic method as practised by Lister when compared with old methods in which drainage, cleanliness, and protection from mechanical or chemical injury were not sufficiently studied: but the theoretical bases of his reasoning have not equally commanded universal assent. The method of proof adopted by Prof. Tyndall has failed to convince practical surgeons, since it has led him to consequences which contradict every-day experience. Numerous surgeons have put on record their successful practice in long series of cases by methods not strictly antiseptic according to Lister, and even by methods which freely admit the atmosphere with all its germs; and one of these surgeons practises at the very same hospital as himself. Now Mr. Lister has always appealed to success as the proof of the truth of his theory. He is therefore called upon, both by friends and opponents, to show that his own practice is so much superior in its results to that of the others, as to lend at any rate some colour of probability to his theory.

This is the chief matter which has struck us in reading Dr. Neudörfer's pamphlet, but there are several other subjects of interest in it, which want of space compels us to pass over, such as his extreme antipathy to pure water as an application to wounds; his exhaustive account of the various other antiseptic applications; his recommendation of the subcutaneous injection of carbolic acid in erysipelas; and, lastly (though first in order in the book) his interesting *résumé* of former investigations into the principles of the local treatment of wounds.

T. HOLMES.

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## NEW INVENTIONS.

### "OPIATINE."

A NEW PREPARATION OF MORPHIA AND CODEIA.

The ingenuity of chemists in therapeutics is much taxed to supply preparations of opium which shall possess all its anodyne properties, at the same time that they are free from the disadvantages of the giddiness, constipation, and headache, which are frequently produced by the use of those extracts and tinctures which include more or less of the resins, oils, and impurities of opium. In the preparation which Messrs. Gale and Co., 15, Bouverie

\* Statistical Report of Operations in the Royal Infirmary, Edinburgh, performed by Prof. Spence from April 30th, 1875, to September 30th, 1876. London, 1876.

Street, E.C., have submitted to us, these objects have apparently been skilfully attained. The constituent salts are present in an uniform and concentrated state, and are so combined that they act with less disturbance of the nervous and digestive system than in most preparations with which we are acquainted. Opiatine removes the difficulty felt by prescribers in selecting an opiate which may be repeated without causing nausea, headache, constipation, and loss of appetite. We have found that the combination of morphia and codeia seems to afford quiet and refreshing sleep and relief from pain, with a minimum of collateral disturbance of the general functions.

#### BRAVAIS' DIALYSED IRON.—“FER BRAVAIS.”

BRAVAIS' DIALYSED IRON is a preparation for which we predict a great future. It is tasteless, free from styptic character, and the acid is wholly removed by dialysis. It appears in the most simple state of combination, that is to say, merely united with oxygen and water, without the presence of acids. It is a most energetic preparation, yet it is in a state in which it does not blacken the teeth, discolour silver, or spoil wine. It is, in fact, the *beau ideal* of a ferruginous tonic. We can speak of it practically in terms of the highest favour, and we regard it as a therapeutic of great value.

It may now be obtained of all the leading chemists in London; and we are informed that Mr. R. Bravais' agents, at No. 2, Philpot Lane, E.C., will supply the wholesale druggists, and that Messrs. Burgoyne, Burbidges, and Co., 16, Coleman Street, E.C. always keep a supply on hand.

#### MEAT-FARINA.

Messrs. Miller and Co., 9, Adam Street, Adelphi, Strand, have submitted to us samples of this new food, which seems to us to combine very valuable features. Thus it contains a very large percentage of albuminous matters, which are so treated as to be readily soluble and easily assimilated. The proportion of nitrogen to carbon is one to twelve, the highest which can be obtained in a food properly balanced, on the type of the natural food, human milk. The presence of the whole of the nutritive matters of the meat is an important feature in this preparation, the meat being so treated as to render the fibrine, etc., soluble. The difference in this respect from potted and preserved meats is one which will at once be noticed in favour of the Meat-Farina; for the potted meats, besides containing from 40 to 60 per cent. of water—and thus being relatively to their nutritious power very bulky, and therefore inconvenient in respect to portability for travellers—are, in truth, overcooked by being heated to a temperature very much above 160° Fahrenheit; this temperature being the highest to which the Meat-Farina is subjected. The meat-farina differs also, on the other hand, from the extract of meat, since from all the meat-extracts the principal sources of nutriment are removed, these extracts generally consisting either of flavouring matter and salts of meat together with gelatine, or of these substances without gelatine. It is unnecessary to add that these extracts do not represent meat; but where it is so added as to give the idea that the consumer is eating meat, it acts as meat without nourishment, commonly a very undesirable illusion.

The mechanical condition of this food is excellent, the meat being so broken up and divided as to be presented readily to the action of the digestive fluids without great labour in mastication. Compared with the salted meats supplied to the sailors of the Royal Navy, it has the advantage of being free from the excess of salt, which in salted meats, supplied in ships' provisions, does much to render them innutritious. The sailor is often glad to receive the small money value of his salt meat in preference to eating it, and to use the money for the purchase of potatoes and soft bread as soon as the opportunity occurs. The beneficial effects likely to accrue from substituting meat-farina, in part at least, for the salt meat rations on board ship, are obvious and the more so since the farina contains an unusually large amount of phosphate of potash. The large proportion of fatty matter which it contains will be a great boon to those who do not get the fat with their meat under ordinary conditions, as is the case with these eaters of salt meat. In the meat-farina the fat is so prepared as to preserve it from rancidity for any length of time, and it is in a state not likely to disagree with very delicate stomachs. It contains about 14 per cent. of fat, 49 per cent. of starchy matter, and 27 per cent. of nitrogenous matter, 5 per cent. of water, and 5½ per cent. of salts.

The starchy constituents are baked so as to be chiefly converted into dextrine, and the whole mixture, or meat-farina, is so far prepared as to require but little further attention in the way of preparation, although it will bear the requisite amount of cooking very well without being overcooked. It is a great advantage of this preparation that it contains a large amount of alkaline phosphates which are capable of yielding phosphates of lime, while the well-balanced amount of salts generally, viz., chloride of sodium, alkaline phosphates and sulphates, will assist in digestion and assimilation of food, and in building up of tissues. Altogether, it seems to us to be an exceedingly well-devised and well prepared food, and well suited for general introduction, especially for use by travellers, on board ships, and in all circumstances where portability, nutritiousness, and facility of preparation are desirable.

#### MESSRS. COPEMAN AND CO.'S PARISIAN COFFEE.

The large annual consumption of chicory in France, amounting to about six thousand tons, would tend to show that it is largely used in the preparation of the very superior coffee usually served up in that country. Many persons object to chicory in their coffee, whilst, on the other hand, it is stoutly maintained that the flavour of the Arabian berry is heightened and improved by a proper admixture of the two substances. Messrs. Copeman and Co. of Norwich have acted on the latter presumption, and have prepared a compound which they call “Parisian Coffee”, and state to be composed of the finest coffee and chicory to be procured. They have submitted their new mixture to analysis by two well-known analytical chemists, who publicly vouch for the purity of both coffee and chicory used in the “Parisian Coffee”. Those who like the flavour of chicory in conjunction with the grateful aroma of coffee will be able to gratify their palate, if they follow the directions printed on Messrs. Copeman's air-tight packages.



## MISCELLANY.

THE Sixth Annual Congress of the Society of German Surgeons will be held in Berlin on April 4th to 8th, under the presidency of Professor Von Langenbeck.

THE death of Herr Poggenдорff, at the ripe age of 81, is announced. Professor at the University of Berlin, Member of the Academy of Sciences, Herr Poggenдорff principally directed his attention to electric researches. For forty-three years he edited the *Annals of Physics*, and was also the editor of the *Scientific Bibliographic Dictionary*.

PERSISTENCE OF IMAGES IN THE HUMAN EYE.—Dr. Paolo Gorini (*La France Méd.*, 1876, p. 735) tells the following incident which occurred to himself. One night, having fallen asleep while reading a book, he presently awoke, when on looking at the wall opposite his bed, which was illuminated by a lamp near him, he observed it covered with printed characters of large size, forming words regularly disposed and separated by lines like those in the book which he had been reading. Not only could he see the text, but he could distinguish the annotations in smaller characters. The whole appearance was vague and indistinct, but there could be no doubt that the image seen on the wall was that of the pages which he had been reading when he fell asleep. This strange apparition lasted twenty seconds, and in this space of time was reproduced each time at which after closing he again opened his eyes. The incident is interesting as a case of persistent image in the retina. The assertion made a few years ago will be remembered, namely, that the object last appearing before the eyes of a person suddenly dying would leave its image on the retina, and the delusive hope was entertained that photographs of the retina might prove of use in medico-legal cases.

INTEMPERANCE AND INSANITY.—Dr. A. E. Macdonald, physician of New York City Hospital for the Insane, says that during the past year there were four hundred and one admissions. Of these two hundred and eighty were intemperate, ninety were moderate drinkers, and only seventeen were abstinent. This record, combined with those of former years, shows that intemperance, more than all other active causes put together, is responsible for the mental aberration of the patients in this special asylum.

HOW THE TWO EYES OF A FLOUNDER COME TO THE SAME SIDE.—Mr. Alexander Agassiz has just published a most interesting fact in natural science. He thus describes (*Microscopical Journal*) the process by which the young flounder, which first has its eyes in the ordinary position, comes to have both organs at the same side of the body.—“I captured one day a number of flounders (about an inch in length) closely allied to the *Plagusia* of Steenstrup, the so-called *Bascania* of Schiödt; they were so perfectly transparent that they seemed the merest film on the bottom of the glass vessel in which they were kept. They were still entirely symmetrical, the eyes well removed from the snout, with a dorsal fin extending almost to the nostril, far in advance of the anterior edge of the orbits of the eyes. They were of course at once set down (from their size) as belonging to a species of flounder in which the eyes probably remained always symmetrical, and I prepared to watch its future development. It was therefore with considerable interest that I noticed, after a few days, that one eye, the right, moved its place somewhat towards the upper part of the body, so that when the young fish was laid on its side, the upper half of the right eye could be plainly seen, through the perfectly transparent body, to project above the left eye. The right eye (as is the case with the eyes of all flounders) being capable of very extensive vertical movements, through an arc of nearly 180 deg., could thus readily turn to look through the body, above the left eye, and see what was passing on the left side, the right eye being of course useless on its own side as long as the fish lay on its side. I may mention here that this young flounder, until long after

the right eye came out on the left side, continued frequently to swim vertically, and that for a considerable length of time. This slight upward tendency of the right eye was continued in connection with a motion of translation towards the anterior part of the head till the eye, when seen through the body from the left side, was entirely clear of the left eye, and was thus placed somewhat in advance and above it, but still entirely in the rear of the base of the dorsal fin extending to the end of the snout. What was my astonishment on the following day, on turning over the young flounder on its left side, to find that the right eye had actually sunk into the tissues of the head, penetrating into the space between the base of the dorsal fin and the frontal bone, to such an extent that the tissues adjoining the orbit had slowly closed over a part of the eye, leaving only a small elliptical opening, smaller than the pupil, through which the right eye could look when the fish was swimming vertically. While the young flounder lay on its side, the right eye was constantly used in looking through the body, and could evidently see extremely well all that took place on the left side. On the following day the eye had pushed its way still farther through, so that a small opening now appeared opposite it, on the left side, through which the right eye could now see directly, the original opening on the right side being almost entirely closed. Soon after, this new opening on the left increased gradually in size, the right eye pushing its way more and more to the surface, and finally looking outward on the left side with as much freedom as the eye originally on the left; the opening of the right side having permanently closed. I have thus in one and the same specimen been able to follow the passage of the eye from the right side to the left through the integuments of the head, between the base of the dorsal fin and the frontal bone.”

A NEW FEVER COT.—Dr. G. W. Kibbee, of New York, has devised a cot for the purpose of treating patients by cold water. It is constructed with two side-pieces, eight inches wide and six feet ten inches long, allowing room for head and foot boards, and leaving six feet six inches in the clear. To the upper edges of these side-pieces is fastened a strong open-work cotton blanket stuff, which permits the water that is poured over the sheet or bandage that encircles the trunk to pass readily through and fall upon an India-rubber cloth attached to the under edges of the side-pieces, and sloping towards the foot, so as to carry the water off into a receptacle. To the outer sides of the wide pieces, or rails, are screwed malleable iron castings that receive the ends of the legs which cross each other below, and are so bolted together as to be movable, allowing the bed to be closed up and set away when not in use. It is so constructed that it can be taken apart and closely packed for transportation. Dr. Kibbee writes: “This fever cot was invented in the summer of 1875, during a scourging epidemic of typhoid fever in the Willamette Valley, Oregon, to facilitate the use of tepid or cool water. For many years I had been in the habit of regulating the heat of fever-patients with water, and found that the best effects were produced by pouring tepid or moderately cool water over the trunk through a folded sheet, or bandage of several thicknesses. That method being inconvenient, on account of soiling the bedding, I at last reached the idea of this fever cot, which obviates the whole difficulty. Water, at any desired temperature, can be poured or otherwise used without wetting anything but those articles used about the patient.”

DR. VALDEMAR RASMUSSEN, of Copenhagen, physician to the Kommune Hospital in that city, and one of the editors of the *Hospitals-Titende*, died on February 22, at the age of 42. He was the author of some able papers on the use of the aspirator in pleuritic effusions, and on other subjects, principally connected with chest-disease.

MEMORIAL TO STROMEYER.—It is proposed to establish, in Hanover, a memorial in honour of the distinguished surgeon, Stromeyer, who was long a resident in that city. A committee has been formed, among the members of which are the principal inhabitants, of all callings. Herr Von Bennigsen is the president.

# The London Medical Record.

## CHARCOT AND PITRES ON CEREBRAL LOCALISATION.

MM. CHARCOT AND PITRES commence the first number of the new French periodical (*Revue Mensuelle de Médecine et de Chirurgie*, Jan. 1877) with a paper (continued in the subsequent numbers) of considerable importance as regards the pathological confirmation of recent experimental researches on the localisation of function in the brain. Besides cases occurring in the Salpêtrière, under their own immediate observation, others of a similar nature and bearing are referred to. A short historical sketch is given of the apparent discord between the facts of pathology and experimental physiology up to the discovery of the electric excitability of the cortex cerebri by Fritsch and Hitzig in 1870. Flourens, as is well known, denied all differentiation of function in the cerebral hemispheres, and in particular stated that the hemispheres had no relation to muscular movements. His experiments led him to very simple rules of clinical diagnosis. "A lesion of the encephalon, which causes loss of station and locomotion, is situated in the cerebellum; that which determines general and universal convulsions is situated in the medulla oblongata; and, if the symptoms be simply stupor or loss of perception or of intelligence, the lesion is situated in the cerebral hemispheres." Opposed to these conclusions, cases were on record which tended to show that certain limited lesions of the cortex cerebri determined persistent paralysis or convulsive phenomena. Lallemand (*Recherches Anat.-Pathologiques sur l'Encéphale*, 1820-34) gives three cases of this nature; Fabre (*Thèse*, 1832) reports a case of right hemiplegia, due, as shown by *post mortem* examination, to a clot of the size of a sparrow's egg, situated "in one of the convolutions of the lateral external and slightly posterior surface of the left hemisphere."

Assuredly, if all lesions of the cortex had been associated with affections of motility, it would have been an easy matter to arrive at definite conclusions in human pathology, regardless of the experiments of physiologists on the lower animals. But, as a set-off to the cases of paralysis with cortical lesions, there are numbers of cases on record in which extensive lesions of the cortex caused no affection of motility. Hence arose hesitation on the part of physicians to come to any definite conclusion, some denying any constant effect of cortical lesions, and others forming all kinds of ingenious speculations.

Some attempts were, nevertheless, made to determine the functions of the different parts of the hemispheres. The attempts of Bouillaud and Dax to fix the locality of the lesion causing aphasia, are well known. In precisely fixing the situation in the third frontal convolution of the left side, Broca made decided advance. In 1836, an Italian physician, Taddei de Gravina, published a thesis, in which he endeavoured to show, by clinical facts, that the regular contraction of certain muscles, or of certain groups of muscles, was under the control of certain determinate regions of the brain. He believed that the fornix

and the corpora mamillaria regulated the muscles of the face, the lower jaw, and the tongue; and that in the lower plane of the middle lobes were situated the centres of the sterno-cleido-mastoid muscles. Though his conclusions were erroneous, they are interesting, as showing the tendency to localisation of function.

Lastly, Hughlings Jackson, by many observations during several years, showed that certain superficial lesions of the cortex caused a special form of epilepsy, a clinical study of which had also been made in 1827 by Bravais (*Recherches sur les Symptômes et le Traitement de l'Épilepsie hémiplegique*. Thèse, Paris, 1827).

In spite of these facts, the majority of physicians and physiologists refused to admit the doctrine of cerebral localisation; and Vulpian, writing in 1866 (*Leçons*), thus summed up the conclusions which then seemed warranted. "I believe that the doctrine of localisation has not received, in the facts of aphasia, that support which it had hoped for. It is possible, strictly speaking, that lesions situated in the course of certain fasciculi of the cerebral fibres, may influence one function more than another, but it is not demonstrated; and, as far as relates to the grey matter of the cortex, there is nothing to justify a similar hypothesis."

The question remained so up to the experimental researches of Fritsch and Hitzig, followed by those of Ferrier, Nothnagel, Schiff, Braun, Eckhard, Carville and Duret. Leaving out all points of detail or differences in interpretation as to the results, it seems conclusively demonstrated that the stimulation of certain parts of the cortex is followed by distinct reaction, while that of others is not. It has been shown that, in the convolutions bounding the fissure of Rolando in the monkey, and those surrounding the crucial sulcus in the dog, the cat, etc., there is a zone the excitation of which causes localised movements on the opposite side of the body, and the destruction of which causes disorders of voluntary motion or even persistent paralysis, while in regions closely related to these no such effects are produced.

The application of these facts to human pathology naturally followed, as a matter of course. The histological researches of Betz, verified by those of Mierzejewski, give a kind of anatomical confirmation of these results, by showing that in the vicinity of the fissure of Rolando, and particularly in the paracentral lobule, there exist large pyramidal cells similar to those of the anterior horns of the spinal cord.

If, however, the facts are really applicable to man, it ought to follow:

1. That lesions of the motor region of the cortex ought to produce motor symptoms;
2. That lesions of the non-motor region should not cause motor symptoms. [This requires qualification.—*Rep.*]

It would seem at first sight a comparatively easy matter to determine the truth or falsity of these propositions by reference to recorded cases, but it is surprising how few can be made available for trustworthy conclusions, owing to the vagueness and want of precision as regards the situation and extent of the lesions. Thus even Cruveilhier, usually so accurate in other respects, records a case of persistent left hemiplegia, due, as he says, to softening of the "posterior convolutions". On examination of the figures representing the lesion, it is found that the lesion is situated at the level of the inferior parietal lobule, and that it had destroyed the middle third of the ascending parietal convolution. It is



therefore necessary, in examining the records of cerebral disease, rigorously to exclude all cases in which the exact topography of the lesion is not given, as also all multiple and diffused lesions. Great care must also be exercised in reference to cases of tumour, on account of the difficulty of estimating the indirect effects of compression on distant parts. When these principles are carried out, comparatively few of the older records have any value. Recent cases, carefully recorded within the last few years, are more to be relied on, and it will be found that they confirm the fundamental doctrines of cerebral localisation.

[The authors give in a note the method employed at the Salpêtrière for obtaining faithful and lasting records of cortical lesions. The hemispheres are stripped of their membranes and macerated for about fifteen days in dilute nitric acid (1 in 5). They are then removed and exposed to the air. They harden, and become reduced to half their volume, but preserve their general form and relations unaltered. When thoroughly prepared they become as hard as wood, of a deep yellow colour, and perfectly dry on the surface. When a lesion of the cortex is discovered in *post mortem* examinations, the exact topography of the lesion is painted in oil-colours on one of the hardened brains, and in this way an exact representation of a durable nature is obtained.]

*Lesions of the Non-Motor Regions.*—That extensive lesions of the cortex may occur without motor symptoms, is abundantly proved both by old and by recent observations. Andral relates four cases observed by himself, and several by others. Vauttier (*Thèse*, 1868) has collected several, and it would be easy to multiply them. How to explain these cases on the theory of functional homogeneity, has always been a matter of difficulty. The usual explanation given is that, owing to the slowness of the development of the lesions, time was allowed for functional compensation by other parts of the hemispheres. This explanation was given by Lallemand, and adopted by Durand-Fardel.

But this explanation is shown to be untenable by the occurrence of cases of wounds of the brain which have not caused either paralytic or convulsive phenomena. Many such cases are on record; among others, the celebrated American crow-bar case. The authors have had two similar cases under their own observation, and they refer to one recently (February 16, 1876) brought before the Société de Biologie, by M. Marot, where, as the result of a comminuted fracture of the right frontal bone, the upper part of the first right frontal convolution was lacerated. The patient died of pyæmia, without having exhibited any motor symptoms. A case was communicated by M. Herpin to the Société Anatomique (May 1876) of extensive laceration of the temporo-sphenoidal lobe, also without motor symptoms. These cases, in which there was total absence of motor symptoms, cannot be explained away by the slowness of growth of the lesions. As will be shown, the whole depends on the position of the lesion; a fact which can only be accounted for by the functional differences of the regions in question.

It is important to determine accurately by clinical and pathological observation which regions may be affected without giving rise to disorders of motility.

Several cases are given in detail, of which the following is a short abstract.

The first case is one of softening of the angular gyrus, of the posterior half of the island of Reil, and of the upper extremities of the superior and middle

temporo-spheroidal convolutions, in which no symptoms were observed. In a second case, there was found after death a patch of softening occupying the first and second occipito-temporal convolutions, commencing one *centimètre* posterior to the subiculum, and extending backwards to about three *centimètres* in front of the tip of the occipital lobe in the left hemisphere. The symptoms were those of senile dementia, but there were no motor disturbances. Both these cases are illustrated by figures of the lesion. M. Sabourin communicates notes of two cases of latent softening occurring in the clinique of M. Ledentu. In one of these, the lesions occupied the same position as in Case II; in the other, there was softening of the cuneiform lobule and the posterior two-thirds of the quadrilateral lobule of the left hemisphere. The same author also brought before the Société Anatomique (October 21, 1876) a case of extensive softening of the occipital and temporo-sphenoidal lobes, in which there was no trace of hemiplegia. Such cases of softening in the region of the occipital lobes, cuneus, quadrilateral lobule, and temporo-sphenoidal lobe, are common enough. A case is given from M. Vauttier's thesis, in which there was an extensive area of softening on the convexity of the posterior lobes, without any motor symptoms.

Lesions limited to the anterior lobes are more rare. Lesions affecting the convexity of the antero-frontal regions, or the orbital lobule, are not associated with paralytic phenomena, so far as cases have been observed. In Marot's case, already referred to, of lesion of the first frontal convolution of the right hemisphere, there were no affections of motility. In a case related by M. Baraduc, both frontal lobes were disorganised in a great part of their extent. This patient was for six years an inmate of the Hospice des Ménages. "He had no will or spontaneity; he marched about the whole day *au hasard*, without determinate aim, picking up objects which lay in his path." [Compare the effects of similar lesions of the brain of the monkey. *Functions of the Brain*, p. 231.—*Rep.*] Recently, the authors communicated a case to the Société de Biologie (August 8, 1876), in which there was a clot of the size of a nut, situated on the second frontal convolution of the right hemisphere, which caused no motor symptoms during life. Among other cases of latent softening may be reckoned one by Andral, the record of which is sufficiently precise to be useful. In this there was softening of the orbital lobule of the left hemisphere. There was general feebleness, and the intelligence was "un peu obtuse"; but motion and sensation were intact.

It results from these facts that destructive lesions may occur in the temporo-sphenoidal lobe, the occipital lobe, the inferior parietal lobe, the *pli courbé*, the island of Reil, the cuneus, the quadrilateral lobule, the orbital lobule, and the anterior extremity of the first, second, and third frontal convolutions, without producing the slightest motor disturbance. [Compare the results of the Reporter's experiments on the brain of the monkey.] It is also important to note that these lesions cause no secondary degeneration of the spinal cord.

*Lesions of the Motor Zone in General.*—The motor region, according to the authors' observations, includes the ascending frontal and parietal convolutions, the paracentral lobule, and, probably, also the parts immediately adjoining, such as the base of the frontal and superior and inferior parietal convolutions. These regions, according to the results of experimental physiology, contain centres for differen-

tiated movements of the opposite side of the body, face, limb, mouth, and tongue, &c. The results of destruction of these regions vary with the position of the animal in the scale, according to the reporter's views, which are quoted. The paralysis is transient in the dog, but permanent in the monkey. The observations of the authors on man are in accordance with the results of experiment on monkeys. But all lesions are not destructive. Some may give rise to irritation, and thus cause convulsive phenomena; others destroy and cause paralysis; while, in some cases, alternation of these phenomena may be observed. The authors first direct their attention to total and extensive lesions of the motor zone, and then to more limited lesions. Only those strictly limited to the cortex are considered, and all cases of diffused irritation, such as those caused by chronic meningo-encephalitis, or by simple or tubercular meningitis, are excluded. The symptoms observed in general paralysis are, no doubt, due to the cortical lesions of the motor zone; but it is very difficult, in all these cases, to be quite sure of the extent of the lesions, or to analyse all the symptoms.

The motor regions receive their blood-supply from the superficial branches of the Sylvian artery, and in such a manner, according to the researches of Duret, that the cortex may be deprived of its blood, while the circulation is unaffected in the central parts. From thrombosis or embolism of the Sylvian artery, after it has given off its branches to the corpus striatum, the cortical motor zone may be softened, and the result is complete hemiplegia of the opposite side, differing in no respect from "hémiplegie centrale vulgaire," resulting from destructive lesions of the opto-striate nuclei.

The first case given is one of left hemiplegia of a complete character, the limbs being perfectly flaccid and powerless, but without loss of sensation. No difference in temperature was observed between the two sides. In this case there was softening of the regions supplied by the Sylvian artery, specially the lower two-thirds of the ascending convolutions, frontal and parietal, extending insensibly into the base of the second frontal gyrus, and into the inferior parietal lobule. The ganglia and rest of the brain were normal.

It is not, however, necessary that the lesion should directly affect the whole of the territory supplied by the Sylvian artery, in order to cause complete hemiplegia of the opposite side. A case is given, illustrated by a figure, of left hemiplegia, with conjugate deviation of the eyes, in which the lesion, though implicating the ascending parietal convolution and postero-parietal lobule, also involved the inferior parietal lobule, and the upper parts of the temporo-sphenoidal convolutions. No loss of sensation was observed. The basal ganglia were normal in this case.

In cases of lesions affecting the motor region, and not rapidly fatal, permanent contractures may occur. In these cases, descending sclerosis of the lateral columns of the cord has been found, in no wise different from that resulting from lesions of the internal capsule as described by Charcot.

A case of this nature is given, communicated to the authors by M. Brun, interne at the Salpêtrière. In this case of left hemiplegia, of four years' duration, there was well marked paralytic contracture of the arm, and less so of the leg. On *post mortem* examination, a patch of yellow softening was found occupying the lower two-thirds of the ascending frontal convolution, the lower half of the ascending parietal convolution, the posterior three-fourths of the second

and third frontal convolutions, and the whole of the island of Reil. The basal ganglia were normal. The sclerosis was, however, not specially investigated in this case.

In the following one, this was accurately investigated. This was a case of right hemiplegia, with aphasia and paralytic contracture of one year's duration. On *post mortem* examination, superficial softening was found in the left hemisphere, affecting the base of the third frontal convolution, the whole of the ascending frontal and parietal convolutions, the two posterior digitations of the island of Reil, and the inferior parietal lobule. The corpus striatum and the optic thalamus were normal. Secondary degeneration was traced in the left crus, in the left side of the pons Varolii, and in the left pyramid. The cord was not examined. Lépine (*Des Localisations dans les Maladies Cérébrales*, 1875) has reported a similar case of hemiplegia of six years' duration, due to cortical softening, and with secondary degeneration in the motor tracts. The softening affected the ascending parietal and the ascending frontal convolutions, the island of Reil, and the superior and inferior parietal lobules. The ganglia were normal. A similar case, occurring in the clinique of M. Charcot, was brought before the Société de Biologie by M. Bouchard, and referred to by Trousseau. The softening was of three months' date, and occupied the anterior marginal convolution of the left side, the second and third frontal convolutions, and the upper part of the island of Reil. Secondary degenerations had occurred in the crus, the pons, the pyramid, and in the opposite lateral column of the spinal cord.

*Limited Lesions of the Motor Zone.*—In partial lesions of the motor zone, the hemiplegia is partial or dissociated; and, contrary to what occurs in general lesion, the hemiplegia is always accompanied by transitory primitive contracture, and may, if the patient survive, remain permanent, and be accompanied by secondary contracture. Frequently, also, in these cases epileptiform convulsions alternate with the paralysis.

In cases of lesion of the central ganglia, the hemiplegia is complete, and affects face, arm, and leg together; but in partial lesions of the cortex, the paralysis affects the face, or the leg, or the arm, or the leg and arm, without the face. Such a hemiplegia is to be called partial or *dissociated*. This fact of dissociation had not escaped the sagacity of Romberg, who stated that, when paralysis occurred from brain-disease limited to the arm or leg, the lesion was situated in the hemisphere. Charcot and Pitres would affirm, with more precision, that when paralysis, limited to one limb, or to the face (monoplegia), results from cerebral disease, the lesion is in the central motor zone, or in the white matter immediately subjacent. Another character of these dissociated cortical paralyses is, that the parts affected are frequently the seat of early contracture more or less pronounced, and more or less persistent.

The first case related is one of left facial monoplegia, accompanied temporarily with a certain degree of rigidity in the limbs of the same side. On *post mortem* examination, it was found that the cerebellum, the medulla oblongata, the pons, and crura were intact.

A slight superficial yellow patch was found about the middle of the ascending frontal convolution on the left side, but not deeply affecting the grey matter. The right hemisphere weighed less than the left, and the surface was found softened and adherent to the



membranes in the region of the third frontal convolution, the lower third of the ascending frontal, the lower fourth of the ascending parietal, the whole of the inferior parietal lobule, including the angular gyrus, the posterior half of the superior parietal lobule, the whole of the superior temporo-sphenoidal convolution, and the island of Reil.

The lesion here was very extensive, and it may seem strange that this case is quoted as one of limited lesion; but it will be seen that, to a large extent, it occupied the non-motor zone, and affected this only at the lower extremity of the ascending convolutions.

In the next case, the lesion was limited to the upper extremity of the ascending convolutions. In this there was observed a primitive contracture, followed by paralysis and flaccidity of the limbs on the opposite side, without any affection of the face. There was no conjugate deviation of the eyes, and no affection of sensation on the paralysed side.

Another case is given in detail, in which there was paralysis of the face and arm on the left side, without paralysis of the leg.

In this case, the only lesion was an area of softening occupying the lower extremities of the ascending frontal and ascending parietal convolutions. The basal ganglia were absolutely intact.

M. Maurice Raynaud communicated to the Société Anatomique (July 25, 1876) a case of a phthisical patient who three days before death was attacked by paralysis limited to the left arm. After death, a small focus of red softening was found in the right hemisphere developed round a meningeal tubercle, of the size of a 20 centime piece, and situated in the ascending parietal convolution and the grey matter at the base of the fissure of Rolando, three centimetres from the longitudinal fissure.

In a note, the details are given of a case recently communicated by M. Proust to the Académie de Médecine, which is of considerable interest and importance. The following are the salient points. A young man, aged nineteen, as the result of a blow with a sabre-bayonet on the region of the left parietal eminence, fell down temporarily unconscious. Next day, there was another attack of unconsciousness of equally short duration; and then apparent recovery, till eleven or twelve days after the accident, when he was attacked with facial paralysis on the right side, limited to the inferior facial region, paresis of the right arm, and a certain degree of aphasia. The right leg was unaffected, and there was no loss of sensation, common or special. Proust, diagnosing inflammatory compression as the result of the wound, after consultation with M. Terillon, decided on trephining, which was done on Oct. 27th, nineteen days after the accident (Oct. 8). Immediately on the operation, and before the wound was dressed, the symptoms had begun to disappear. The face remained much in the same condition, but the paresis of the arm had diminished and the aphasia had disappeared. The operation was followed by an attack of erysipelas, which ceased by the 9th November, and from that time recovery was complete.

On careful investigation, MM. Proust and Terillon arrived at the conclusion that the part immediately injured was the ascending parietal convolution, on a level with the second frontal, and that the ascending frontal convolution and the second and third frontal convolutions were secondarily influenced by the lesion in their proximity.

M. Lucas-Championnière, in 1874, practised tre-

phining for a similar case, in which, from injury of the left side of the head, paresis occurred in the right arm, and partial epileptiform seizure. The case is reported *in extenso* by M. Paris (*Indicature de la Trépanation des Os du Crâne au point de vue de la Localisation Cérébrale*, Thèse, 1876); but the seat of the lesion was not described accurately enough to be made the basis of rigid conclusions.

Another case is quoted from Cruveilhier, under the heading of Paralysis with pains and epileptiform attacks in the right limbs. There was no paralysis of the face. A tumour of the dura mater pressed on the "scissure interhémisphérique". An examination of the plate shows that the region directly affected was the paracentral lobule at the upper extremity of the ascending convolutions.

In certain cases the cortical lesion, instead of remaining circumscribed, advances gradually. When it has invaded the whole of the motor zone, the hemiplegia becomes complete, and it is impossible then to distinguish between cortical and central paralysis; but the clinical history shows that the case has been one of successive monoplegiæ, a character which belongs to cortical lesions alone. Many examples of this will be given when the authors treat of partial epilepsy. Bernhardt has reported several cases of cortical lesions with monoplegia, but his papers are unfortunately not very precise. His papers are to be found in the *Archiv für Psychiatrie und Nervenkrankheiten*, 1874, vol. iv.

When cortical lesions are not rapidly fatal, they are followed by permanent paralysis, with secondary contracture, just as in lesions of the motor track of the internal capsule. In illustration of this statement, several cases are detailed.

The first is a case of permanent left hemiplegia, with secondary contracture of the limbs. The paralysis did not affect the face or the tongue, and sensation was intact. From the apoplectic seizure to death a year intervened. On *post mortem* examination, an old yellow softening was found in the middle third of the ascending parietal convolution on the right side. The ganglia were intact. Without doubt, though not specially investigated, the secondary contracture was due to sclerosis of the lateral column of the cord on the side opposite the lesion.

In the next case recorded, this descending degeneration was carefully determined. This was a case of permanent right hemiplegia in a woman aged 79, for several years among the incurables under the care of Charcot. She had no aphasia, but was very deaf. She had slight paralysis of the right side of the face, and paralysis, with rigid contracture of the right arm and leg, without affection of sensation. After death, an area of softening was found in the left hemisphere, well defined, and limited to the lower two-thirds of the ascending parietal convolution. The other parts and ganglia were normal. The left side of the pons was somewhat atrophied. The left anterior pyramid was also atrophied, and on microscopical examination, there was found a band of sclerosis, lozenge-shaped on transverse section, occupying its antero-internal part.

The next case given is one of spasmodic infantile hemiplegia. A girl, aged 10 years, had suffered from convulsive attacks without paralysis since the age of four and a half, and was received into the Salpêtrière, under the care of M. Charcot, on January 2, 1876. In 1872 she had had attacks of agitation or convulsion of the right leg, without loss of consciousness. The limbs of the right side became

gradually paretic and rigid. In 1875 the attacks became more frequent, and the rigidity more marked. On admission, the state of contracture of the right limbs existed, but no facial affection. She had numerous epileptiform seizures, and died April 1876. On examination after death, there was found discoloration of the anterior extremity of the first frontal convolution of the right hemisphere. In the left hemisphere there were several patches of a similar discoloration scattered on the surface of the convolutions, and softening, with atrophy, of the whole of the paracentral lobule, and of the anterior third of the quadrilateral lobule. The ascending frontal and parietal convolutions were not affected farther than about 1 cent. at their upper extremity. In the spinal cord was found a band of sclerosis occupying the posterior part of the right lateral column, like that resulting from lesions of the opto-striate nuclei or internal capsule.

M. Bourneville communicated to the Société de Biologie (Jan. 1876) a case occurring in the clinique of M. Charcot, of a girl, aged 18, who had had left hemiplegia from the age of 6, and had suffered from frequent convulsions and tremors in the paralysed leg. There was no paralysis of the face or tongue. She died after a series of 297 fits. On examination after death, an area of cortical softening was found in the left hemisphere, anterior to the fissure of Rolando, and affecting the upper half of the ascending frontal convolution, at the point of origin of the first and second frontal convolutions, and the whole of the internal surface or paracentral lobule. The right lateral column of the spinal cord was distinctly atrophied, and throughout the whole cord this column was affected with sclerosis. In the cervical region, a band of sclerosis was also found in the antero-internal part of the left anterior column.

This existence of secondary sclerosis in the spinal cord as the result of cortical lesions is an important fact. They occur only when the lesions are situated in the motor zone, and not at all from lesions in the non-motor zone, however old, or however extensive these may be. Hence it may be concluded that between the cortical motor zone and certain fibres of the lateral tracts of the spinal cord there exist relations more or less direct, which do not obtain with reference to other regions of the cortex.

D. FERRIER.

(To be continued.)

## DUPLAY ON OSTEO-PERIOSTITIS OF THE TYMPANUM.

At the Hôpital Saint-Louis, M. Duplay recently gave a clinical lecture on a case of osteo-periostitis of the tympanic cavity.\* He said:—

You have just seen, gentlemen, a patient with a serious affection of the right ear. This man, aged 35, follows the arduous calling of a blacksmith. His illness began five months ago. At that time he was seized with a severe pain in the ear which gradually became excessive and continual. The pain, situated in the right ear, was accompanied with buzzings, and the acuteness of hearing on the same side was diminished.

The first cause of these functional troubles remains in his case obscure. You know how often one sees

inflammation of the pharynx and of the nasal fossæ propagated by the Eustachian tube to the middle ear, giving rise to symptoms similar to the above. Now, at the beginning of his illness, this man was in perfect health, and presented no sign either of sore throat or of coryza. There are no signs of syphilis. We must then consider as the cause a simple access of cold, which we may admit when we remember that the patient works in the open air, and is constantly exposed to inclemencies of weather.

However that may be, five weeks after the appearance of the pain and the buzzings, the patient was taken with fever and general *malaise*; the pain extended to the interior of the ear and the post-auricular region, and there was swelling corresponding to all that portion of the temporal bone which surrounds the external meatus. The auditory function was abolished on this side; and the pains, which had become intolerable during the past few days, were momentarily relieved by the establishment of an abundant discharge of very fetid pus by the meatus; rupture of the membrana tympani had allowed the evacuation of the pus contained in the tympanum. After enduring his condition for some time, the patient, two months since, entered the Hospital Saint-Antoine, where he remained for two months, during which he obtained but little relief; the treatment being directed only to the discharge, and consisting of injections of tepid water from a small glass syringe. He quitted that hospital to come to us.

In order more completely to examine all the regions bordering on the ear, we have had that side of the head shaved. It was then easy to see a considerable swelling of all the peri-auricular regions: the auricle appeared almost detached from the head; the swelling was greatest on the temporal bone and the external face of the mastoid process. No softening or fluctuation is discoverable. At the level of the mastoid process, immediately behind the auricle, the skin is reddened and sensitive to pressure. This point of greatest pain and pressure will be of diagnostic importance, as you will see. The pains also have some peculiar character; they recur at regular intervals, like neuralgic pains, by attacks which last one or more hours, sometimes all night; they follow exactly the course of the temporal and auricular branches of the auriculo-temporal nerve. The patient affirms that the pains, far from being confined to the ear, radiate towards the temple from a point situated in front of the external auditory meatus; we may conclude that these pains are neuralgic.

Direct examination by reflected light is not of much assistance, as it is rendered impossible by the swelling of the soft parts of the external meatus. If the speculum be introduced as far as the swelling allows, we see the canal occupied by a large quantity of thick, greenish, and very fetid pus, the stagnation of which causes excoriation of the skin lining the external orifice.

After freeing the canal from this liquid, another obstacle is brought to view in the shape of a swelling of the skin covering the osseous meatus. The inflammatory swelling is such that the walls are in contact, so much so that the calibre of the meatus is represented only by a narrow chink, limited in front by the antero-inferior wall, and behind by a considerable prominence of the postero-superior, which more especially blocks the canal. We must not, then, dream of exploring, *de visu*, the state of the middle ear, but examination of the subjective and functional symp-

\* *Le Progrès Médical*, March 10th, 1877.



toms will enable us to supply its place to some extent.

I have told you of the whistlings and buzzings which troubled the patient at first, as well as the diminution of hearing; this last functional trouble is more valuable than the others, and the exact determination of its import must now be considered. The patient hears nothing if the left ear be completely closed; he does not hear the watch applied to the right ear, even when pressed against the pinna, or applied to the cranial bones. It must not, however, be thought by an inattentive observer that the auditory apparatus is destroyed on this side, but the elements of a certain diagnosis must be sought by other means. You know the value of the tuning fork, applied to the cranial and facial bones; this mode of exploration gives certain information in cases where the middle ear, that is, the transmissive apparatus, is alone affected. In this case, our patient hears better with the diseased ear than with the sound one; we may affirm from this the integrity of the labyrinth, that is, the perceptive apparatus.

The origin of the affection is evidently in the middle ear; for, just as excessive photophobia reveals, without any examination, in some children, the existence of keratitis, so the persistence of an abundant purulent discharge, preceded by the symptoms you know, can only belong to a suppurative median otitis.

Besides, the course followed by the symptoms, and their long duration, since the pus is only evacuated after six weeks, whilst in ordinary cases perforation of the membrana tympani, and discharge of the pus, do not take more than eight or ten days, seem to indicate a special variety of median otitis—*periosteal otitis*. I will here briefly recall to your minds that acute inflammation of the soft parts of the tympanic cavity may follow two principal courses; in the first, and most common, the progress is very rapid; the inflammation is limited to the tympanic mucous membrane, and to that of the Eustachian tube, the calibre of which is obliterated. The muco-pus, not finding any outlet, distends the membrana tympani, and causes its rupture; the resulting evacuation most often allows a cure to take place in a longer or shorter time. In this variety, which constitutes purulent catarrh of the tympanum, there may not, possibly, be observed a secondary propagation of the inflammation to the deeper parts, that is to say, to the periosteum: but, in this case, this is a complication. In the other and graver form, on the other hand, the disease is constituted from the first, or, at any rate, very early, by a true periostitis and its consequences. It can scarcely be necessary to remind you of the anatomical structure which produces these troubles; you know that the tympanic mucous membrane directly lines the periosteum. Therefore, the inflammation, when very violent, may rapidly spread to the periosteum, producing *periosteal otitis* at once, which is the most serious form of otitis.

You will recognise at first sight this periosteal otitis whenever you encounter swelling in the meatus, as pronounced, and as resistant as that which you have just seen in our patient; it is a hard cedema, which, occupying all the periphery, or only one point of the wall, causes occlusion of the canal.

In these conditions you may affirm that the periostitis of the tympanum is propagated to the osseous portion of the external auditory meatus, after rupture of the membrane. Then, in this particular case, we may say that our patient has a periosteal otitis, and we may add to this an *osteo-periostitis* of the tym-

panum and osseous meatus; for there is little doubt that the subjacent bone is itself inflamed.

It is important that you should be aware of the gravity of such an affection as this, which, by its tendency to extension, may lead to very serious, even fatal, results. The most usual and most favourable complication is, evidently, extension of this periostitis to all the external surface of the temporal bone, that is to say, to the squamous and mastoid portions. This secondary affection, true external osteo-periostitis by propagation, is recognised by different signs, and generally takes the following course. The regions above-named are joined by a large diffused swelling, in the midst of which is, at first, partial softening, then fluctuation; an abscess opens itself, or is opened, and the bone is found denuded; this is the limit, the wound heals, and the patient is cured more or less slowly. We often, however, see grave complications supervene, when propagation takes place to the interior of the bone, and the inflammation involves the periosteal investment of the mastoid cells, and the osseous trabeculae themselves. In the most serious cases, that is, where propagation takes place to the centre of the bone, numerous dangers arise, differing in nature, but equal in gravity. The neighbourhood of the meninges, of the cerebrum, and of the cerebellum, the presence of the lateral sinus, of the internal jugular vein, the proximity of the internal carotid artery, the passage of the facial nerve through the aqueductus Fallopii, will suggest to you the complications which I can but mention here. In the first place, by propagation, there come meningitis of the base, abscess of the cerebrum and cerebellum, then by alteration, phlebitis and the purulent infection which accompanies it, hæmorrhage from the carotid, and, lastly, facial paralysis.

The propagation of the osteo-periostitis of the meatus to the mastoid cells, by no means excludes that to the surface of the bone; on the contrary, the two modes of propagation are often associated; nevertheless, it is common to see simple external periostitis confounded with central or mastoid osteo-periostitis, and treated by trephining, a dangerous operation in certain hands, and altogether useless, at least in these cases, where a simple incision would suffice. I am persuaded that very often this mistake, and the operation it involves, have been committed. Yet the diagnosis, at least very often, is simple; external periostitis of the temporal bone is accompanied by considerable swelling of the temporal and mastoid region, and the furrow which separates the pinna from the plane of these regions disappears completely; it is preserved, on the other hand, in osteo-periostitis of the mastoid cells, and pressure at this part causes no pain, which is acute in the former case. We cannot verify this distinction in the patient you have just seen, as in him the two modes of propagation have taken place simultaneously, and, undoubted as is the otitis of the mastoid cells, on the other hand, the auricular furrow is partly effaced, pressure there is painful, and the enormous swelling around does not permit us to doubt the existence of external periostitis. Nevertheless, by careful examination you may assure yourselves of the existence of the two kinds of manifestations; the external periostitis does not exist at the level of the mastoid apophysis, and the furrow is preserved between it and the pinna; the pain at this point, the redness of the skin, and a certain want of resistance to the finger, without fluctuation, reveal deep osteo-periostitis; on the contrary, at the upper part, the shell of the temporal bone is marked by the

external periostitis, and the furrow which divides above the temporal plane from the pinna, has completely disappeared. Applying the preceding data to this patient, we make the following diagnosis: osteo-periostitis of the tympanic cavity, with external periostitis of the squamous portion of the temporal bone, and propagation to the mastoid cells. This extension of the inflammation, superficially and deeply, indicating that the temporal bone is extensively diseased, should be considered as serious in regard to the prognosis.

This is, in fact, very grave, and we must be extremely guarded with regard to the issue of the disease; for we see but part of the lesions, whilst it is to be feared that propagation may take place to the base of the brain. At present, nothing has indicated this complication; there has been neither fever, rigor, nor vomiting; vertigo is absent; the facial nerve is intact, and no hæmorrhage has taken place. The prognosis with regard to the function of hearing is by no means hopeless; the tuning-fork has revealed to us with certainty the actual integrity of the internal ear. Now, it is not rare to see this affection, when properly treated, disappear, and leave the hearing unimpaired, so that, without promising anything to the patient, we may hope for him, at least, partial re-establishment of the auditory function.

In order to obtain these results, however, we must not remain inactive; in regard to this, I may say that, had the patient placed himself under efficient treatment from the first, the disease would not have made the deplorable progress which you have witnessed to-day. This treatment I will point out to you in two words. I suppose the diagnosis to be well established; there exists an external periostitis, or an osteo-periostitis of the mastoid cells; in the first case, at the most painful and most projecting point, even in the absence of fluctuation, an incision should be made down to the bone, dividing the periosteum. In the second case, where the mastoid cells are affected, incision alone is useless; a trephine must be introduced through the healthy shell of bone into the spongy mass. This operation, which lays open an abscess hidden under healthy tissues, is certainly one of the best in surgery, and is followed by the rapid disappearance of all alarming phenomena.

The diagnosis is not, however, always easily established; obscure cases are not unfrequently met with, in which one is unable to decide whether or not the external periostitis marks the osteitis of the cells. The method to be pursued in these cases has been laid down by Wilde. According to him we should, in these cases, proceed from the more simple to the more serious, and treat at first the evident lesion, the external periostitis. We should make an incision, and then wait twenty-four hours; if the symptoms persist, we are justified in believing that deep osteitis exists, and may use the opening to introduce the crown of a trephine to open the mastoid process. The results of this operation, especially in any acute and rapid cases, are brilliant and salutary.

Here we have a subacute affection, almost chronic, of too long standing to yield quickly; supposing even that the patient escapes any complication, we must not expect marked amelioration for a long time. The periostitis of the temporal bone is old standing; it has produced a deposit of new bone, and incision will do nothing for that. But a large opening of the mastoid cells seems absolutely indicated. In this case I do not propose simply to open an abscess of the mastoid cells, but to favour the cure of the osteitis by facilitating the flow of pus, by allowing the

middle ear to be washed out, and at a given time, perhaps, to extract sequestra, for it is very probable that the osseous trabeculae of the mastoid cells are affected with caries or necrosis. The operation will be very simple on account of the friability of the bone. In acute cases, on the other hand, when the investment of compact tissue of the mastoid process is still healthy, a true trephining is necessary. I reject absolutely the triangular sharpened punches which some use; they are almost useless, and certainly dangerous. The operation with the trephine is very simple; an incision is first made over the mastoid process, behind the cartilaginous meatus, the periosteum is turned aside, and the crown of the trephine applied on the point of intersection of the vertical line of incision, and a horizontal line on a level with the upper part of the meatus. The direction taken by the trephine should be exactly parallel with the external meatus, that is, obliquely forwards and inwards. When the opening has been made, a little caoutchouc tube will be inserted in order to maintain the opening and permit washing out. The laying open of the carious bone, the injections which will force out the pus from the middle ear through the external meatus, will prevent the formation of pus, and will place the patient in a condition which will favour, in due time, a repair of the lesions produced by the osteo-periostitis.

The operation was performed with the anticipated results, and the following is noted as the condition of the patient two months afterwards. "The patient has passed through a series of complications. Local and general phenomena induced a fear of chronic encephalitis, and then a large abscess developed itself in the sheath of the sterno-mastoid. After the opening of this abscess, deeply situated beneath the muscle, the local and general phenomena rapidly ascended, the pain in the head and the fever disappeared, the appetite returned, and at the present time the patient is relatively in a satisfactory state. The prognosis as to the future, however, remains very grave."

W. DOUGLAS HEMMING.

### TAYUYA, A NEW REMEDY FOR SYPHILIS AND SCROFULA.\*

THROUGH the kindness of Mr. E. Berdoo, surgeon, of 56 Victoria Park Road, the writer has received a sample of the tincture of tayuya, and the pamphlets and references given in the foot-note. The medicine is at present a proprietary one, in the possession of the Brothers Ubicini, of Pavia, who sell it retail at about four shillings the ounce, but make the usual discount to medical men, pharmacutists, and hospitals. From the sources indicated, the following particulars may be gleaned. The naturalist Signor Luigi Ubicini, of Milan, whilst travelling in the virgin forests of Brazil, found the natives using the

\* Tayuya (proprietà dei fratelli Ubicini) contro La Sifilide e la Scrofola. Relazione del Dottore M. L. Faraoni al Congresso Medico di Torino (18-23 Settembre, 1876), Milano. Serafino Muggiano e Comp., 1876, pp. 52.

La Tintura di Tayuya, etc., sperimentata nello Spedale di S. Orsola di Bologna nella Clinica delle Malattie Veneree e Cutanee. Relazione del Dottor Ruggero Galassi (Assistente alla suddetta Clinica). Estratto dal *Giornale Italiano delle Malattie Veneree e della Pelle*. Anno XI, Ottobre, 1876.

Nota del dottore Gaetano Strambilo, Estratto dalla *Gazzetta Medica Italiana Lombarda*, No. 44, del 30 Ottobre, 1875.

*Bulletin Général de Thérapie*, Sept. 15th, 1876; and *ibid.* Aug. 30th, 1875. *ibid.*, 16 Juillet, 1875; p. 32.  
*Il Patriotta, Giornale della Città e Provincia di Pavia*. Sabato, 17 Febraio, 1877.



*Tayuya* root as a remedy against syphilis. It was he who introduced the plant into Europe, sending samples to his brothers at Pavia. He describes the plant as a shrub with long and tuberose root, the stem hairy, the leaves dentate, rugose and rough, divided into five or seven lobes, obtuse and cordiform at the base; the fruit is oblong, from 1.50 to 3 centimetres (about  $\frac{1}{2}$  an inch to  $1\frac{1}{4}$  inch) in length, and somewhat trilobate; this contains about a dozen seeds, sometimes a few less, but rarely more. The plant grows wild in the forests and in the mountains, in stony places, and very often among the coffee plants. Although all parts of the plant are active, the root is preferred, and from this two alcoholic tinctures are prepared. The stronger (*tintura madre*) is used for hypodermic injections, in gramma doses (15 minims); and diluted with water for external use, in poultices, compresses, and the like. For poultices only a decoction is sometimes employed. The weaker tincture (*tintura diluita*) consists of one part of the stronger or mother tincture with three parts of rectified spirit. This is usually prescribed in doses of two to twenty drops (the dose being gradually increased), two or three times a day.

Professor Santo Garovaglia kindly furnished the following notices. "The *Tayuya* plant (*Dromophylla Pendulina*) belongs to the natural order *Cucurbitaceæ*. This genus, established by Silva Manso, in 1836, *Catant. Bras.* p. 30, has the following synonyms: Endl. 1843, Spl. III, p. 91, n. 5152, 2: g. *dubium cucurbitar.*—Par. Walp. 1865. Rep. V. p. 764. —Lindl. 1847. Veg. Kingd. p. 315, *Dromophylla*.—Römer, 1846. Fam. nat. II, p. 12-49 gen. *Embryanica*." In November 1874, the pharmacien, Stanislas Martin, member of the Academy of Sciences of Paris, received one kilogramme of the roots, and in 1875 other samples. In the *Bulletin Général de Thérapeutique*, of July 15th and August 30th, 1875, he has put on record his analyses of this root. He describes his sample as cut up into discs or slices, of one-twelfth to one-eighth of an inch in thickness, their circumference varying a good deal, the largest being nearly three inches round. He failed in isolating any alkaloid, but obtained a greenish resin; a fatty matter of yellow or citron colour; and a brown extractive matter, very bitter and aromatic; tannin, mucilage, glucose (of this traces only), starch, volatile oil, magnesia, alumina, lime, iron, potash, and liquorice. Professor Luigi Gabba made analyses of 1200 grammes of the *Tayuya* root in the chemical laboratory of the Royal Polytechnic at Milan. He found that the woody fibres of the root, boiled in alcohol, yielded a brownish solution, which was neutral. On evaporation in a water-bath, a brown amorphous residue was obtained, soluble in cold water, but better in boiling water. This, when dilute sulphuric acid was added, with moderate heat, did not at first undergo any alteration, but after awhile it gave sugar reactions with Fehling's test, which led him to conclude that a glucoside was present (as Martin also found). The aqueous solution treated with potash, and then decomposed with an acid, gave rise to a precipitate little soluble in water but soluble in alcohol. He did not, however, succeed in isolating any alkaloid, or getting enough of the above-mentioned material for ultimate organic analysis. The samples sent to Professor E. Zenoni were reported on by him in very similar terms. The most definite analysis of those reported seems to have been made by the pharmacist, M. Yvon, which was published in the *Bulletin Général de Thérapeutique*, of September 15th, 1876. It is in substance as follows.

One hundred grammes of the dried and powdered *tayuya* root, dried in a stove at a temperature of 102 deg. C. (equal 116 deg. Fahrenheit nearly) gave—

	Grammes.
Loss of water ... ..	11.57
Ash or mineral residue consisting of ... ..	11.47
Sand or silica ... ..	1.02
Lime precipitated as oxalate, and estimated as carbonate ... ..	4.21
Magnesia, precipitated as ammoniacomagnesian phosphate, and weighed as pyro-phosphate ... ..	3.12
Iron and alumina (by sulphide of ammonium) ... ..	1.23
Hydrochloric and sulphuric acids — traces	
Potash and soda (by difference) ... ..	1.39
Glucose ... ..	0.84
Starch (estimated as sugar) ... ..	17.32
Resin, soluble in ether and chloroform ... ..	1.17
Crystalline matter (probably an alkaloid, deposited from tincture) ... ..	0.24

The resin mentioned above was of consistency like beeswax, of yellowish or lemon colour, and of very bitter taste. Its melting point was very carefully determined and found to be 49 deg. C. (122 deg. Fahrenheit). M. Yvon at first thought it was a kind of wax, but he found that it had an acid reaction, and was partially soluble in alkalies and ammonia. In this solution shining microscopic crystals formed after awhile, and these were similar to the crystals mentioned above. The quantity was too small for ultimate analysis. He also found an essential oil with strong odour, on distilling the water from the root. All the attempts at isolating an alkaloid failed. The *physiological* effects appear, so far as a few experiments on healthy persons have shown, to consist in an increased flow of saliva and gastric juice, increased appetite, improved digestion, and a mild aperient action in small doses; in larger doses, vomiting, colic, diarrhoea, nausea, sweating, and salivation (the latter not extreme), seem to have been the effects. The *clinical* experience recorded goes to show that in *tayuya* we have a safe, pleasant, and valuable substitute for mercury; a remedy which possesses all the good qualities of mercury without its unpleasant effects. Although the glowing terms in which the reports are couched induce some caution in English readers, it would certainly seem that a fair case has been made out for the trial of *tayuya*.

W. BATHURST WOODMAN.

#### GRIMSHAW ON MANAGEMENT OF THE BOWELS IN ENTERIC FEVER.

In this short paper (*Dublin Journal of Medical Science*, February 1877), Dr. Grimshaw treats of the use of purgatives and astringents in enteric fever, and his remarks on that subject appear to us so judicious, and of so much practical importance, that we make no excuse for giving here his views in full, and in his own words. Speaking of the indiscriminate use of purgatives on the one hand, and astringents on the other, he says: "It is by no means easy always to diagnose a case of enteric fever in its earliest stage, but no one should ever venture upon active treatment until the nature of the disease has been made out. The frequency with which a 'looseness of the bowels' or a 'gastric attack' has been treated simply as such by astrin-

gents in one case, or a 'good clearing out' in the other, without any careful attempt having been made either to determine the cause of the looseness, or the nature of the gastric attack, is a disgrace to the profession of medicine. In many instances, this looseness of the bowels, or gastric attack, is the commencement of a serious attack of enteric fever, which, if carefully diagnosed and treated accordingly, might have terminated favourably.

"We know that patients walk about at the commencement of and not unfrequently during the greater portion of the course of an attack of enteric fever, and some persons have excused an error of diagnosis upon the ground that the patient came to their house to consult them, and had only a furred tongue, a quick pulse, and had been in the same state for a week. It may be the result of my peculiar training, but I must say I would assume that a patient with a quick, weak pulse, furred tongue, loss of appetite, and who had been in the same state for a week, had enteric fever, unless there was good cause to believe to the contrary. If I find, on inquiry, that he had been chilly, had vomiting, pains, and either constipation or diarrhoea, and irritation of the urinary organs, I would consider my diagnosis almost certain, even before I had an opportunity of testing the temperature and examining for an eruption, or ascertaining the nature of the discharge from the bowels. Careful observation has convinced me that some practitioners stop short after the discovery of the quick pulse and furred tongue, and only inquire for a headache or for the state of the bowels. If the bowels are confined, the inevitable purgative follows, which is only regulated in intensity by the length of the constipation and the habit of the patient. If the bowels are too free, then as certainly follows the astringent. In a few days more the patient is on the brink of the grave from enteric fever. In other instances, the practitioner explains to the patients or his friends that he has 'only got gastric fever'. Now this is a course which should be scorned by every educated physician. He should, in every case, state emphatically and distinctly, that the disease is typhoid fever, which is the term the public are familiar with as the title of this very severe and treacherous form of disease. I believe it is scarcely excusable for a physician to mistake enteric fever for merely gastro-intestinal catarrh, inasmuch as in a large majority of instances a catarrhal condition of the mucous membrane occurs at the commencement of enteric fever, and should be taken as pointing to an impending attack of that disease." Again he says: "It appears to me to be extremely irrational to expect that in a case where the bowels are already free, possibly too free, that any additional eliminative power will be gained by the administration of a stimulant to an already over-acting organ; and, further we should not forget that we have an irritated, inflamed, and probably ulcerated intestine which is sadly in want of rest to enable it to return to health. The prescriber of astringents, on the other hand, also forgets the inflamed and ulcerated intestines, and that by the use of astringents he is retaining irritating and decomposing matters in contact with the ulcers, thus increasing their irritation, and promoting the tendency to septic poisoning and deep ulceration, which are the great dangers in enteric fever." Dr. Grimshaw believes that the bowels in enteric fever may be open four times in the twenty-four hours with advantage, and that they should never be allowed to remain closed for more than forty-eight hours. To attain

these objects, Dr. Grimshaw relies mainly upon regulations as to diet, which consists chiefly of milk and beef-tea, the latter being avoided where there is a tendency to diarrhoea. In this condition, he has found boiled milk very valuable; and in the way of drugs, sulphuric acid and opium. Constipation he treats with small doses of castor-oil and a few drops of laudanum. Ergot he has found of great service in the treatment of hæmorrhage, in which class of cases he has never had a fatal result. Dr. Grimshaw recommends great caution in the transition from a liquid to a solid diet, and advises as a beginning chicken-broth, then chicken, and lastly mutton. In conclusion he says: "I believe the main point to be attended to in the management of the bowels in enteric fever is to keep them *free*, but *not too free*, and to avoid as much as possible purgatives or astringents." On looking over our own practice for the last six months, we find that we treated one hundred and twenty-two cases of enteric fever. In fourteen of these, chalk and opium, gallic acid and opium, and sulphuric acid were used to restrain diarrhoea; in six, once in five cases and twice in one case, half an ounce of castor-oil was given to relieve constipation, chiefly during convalescence. Amongst the whole hundred and twenty-two, six sedative enemata were given to restrain diarrhoea; and twenty-six enemata of simple tepid water to open the bowels.

ALEX. COLLIE, M.D.

#### DANFORTH ON THE PROCESS OF REPAIR.

DR. I. N. DANFORTH, lecturer on pathology in Rush Medical College, has published an account (*Chicago Med. Journ. and Examiner*, Dec. 1876) of some interesting investigations of a wound, from the time of its infiltration to its complete repair.

On the evening of February 23, 1876, a healthy, active, medium-sized frog was brought under the influence of curare, by subcutaneous injection. The animal was then placed upon a frog-plate, the tongue gently drawn out and its edges pinned to a piece of perforated cork, which was fitted to the opening in the frog plate; the perforation in the cork being covered by a slip of glass, upon which, of course, the tongue rested. Especial care was taken not to put the tissue of the tongue so much upon the stretch as to materially interfere with the free circulation of the blood, or the action of the blood-vessels.

A minute wound was now made through the tongue by means of a pair of sharp pointed scissors, lengthwise of the organ, or in the direction of the muscular fibres; care being taken to select an islet of tissue which was least vascular, and in which the few vessels were quite small. The frog was now placed upon the stage of the microscope, and the changes of the next half hour closely watched. At 9 o'clock on the evening of February 23, about one hour after the wound was made, the wound was rather more than one-sixteenth of an inch in length; its form was nearly oval, the edges having been drawn apart by the contraction of the muscular fibres. The bottom or floor was covered by a pretty firm blood-clot. In watching the escape of this blood from the vessels, Dr. Danforth noticed that the current of extravasated blood moved in compact and orderly columns across the floor of the wound, forming itself into different columns, representing the different vessels from which it flowed, and these several columns advanced



in regular order, with but little variation in their course, until two streams chanced to encounter each other, when the larger and stronger stream would generally bear away the smaller and weaker one.

In another hour all oozing of blood had ceased, and coagula had formed in the wounded vessels up to the next collateral branch.

Twelve hours after the injury, in the immediate vicinity of the wound, the vessels were distended and gorged with blood, and stasis had occurred in most of them. In some, however, the circulation still was active and vigorous. The walls of the wound were mostly smooth and sharply defined, but from the (apparently) upper and lower borders little buds irregularly knotted, pale, and terminating in a club-shaped extremity, had commenced shooting out; the two buds (two masses of round cells) were almost opposite, and seemed to be growing toward each other. The floor of the wound presented, 1st, a few minute coagula; 2nd, blood-corpuscles, both white and red; and 3rd, a few pale, very minute fibres of fibrine.

Thirty-six hours after the injury, the little growing buds had become smaller. The minute fibres on the floor of the wound had increased and were interwoven in all directions, and in their interstices were many blood-corpuscles of both kinds. The surrounding vessels were enlarged, and somewhat tortuous; in vessels which showed any movement of blood at all, the circulation was very active. Small coagula were seen at intervals along the border of the wound. The tissues surrounding the injury were becoming slightly cloudy. On examining the tissues with No. 5 Hartnack, Dr. Danforth could easily see that the cloudiness was due mainly to the migration of the leucocytes.

Sixty hours after the injury, the wound was considerably smaller; the cloudy appearance of the surrounding tissues had increased; the border of the wound was now quite thickly fringed with little buds or protrusions, which, upon being examined with a quarter-inch lens, were seen to be composed almost exclusively of cells. In some of these growing buds, a minute blood-vessel, with its tiny blood-stream, could be made out. These vessels were always in the form of loops, a single minute current flowing into the cell-bud through one branch of the loop, and immediately returning through the other.

The circulation in the vicinity of the wound was very active; the blood-vessels were dilated and tortuous; stasis was no longer present, except in a few quite small vessels. The veins in the periphery of the microscopic field were enormously distended, and the blood-stream was both very dark and very slow. In some of the vessels in sight, the jerky interrupted movement of blood, often described by authors as occurring in inflammation, could be very distinctly seen. Many blood-corpuscles were seen on the floor of the wound, but the network of fibres had nearly disappeared.

Eighty-four hours after the injury, the area of the wound was no smaller; in fact, it seemed a little larger. New vessels were multiplying around the wound, and new buds were pushing their way into the open space. The floor of the wound was now occupied by a thickly woven reticulated network of minute fibres of coagulated fibrine, which had formed since the last observation. The interstices were filled by blood-corpuscles, both red and white. The circulation was very active, and the frog seemed in good health.

One hundred and eight hours after the injury, the size of the wound had very greatly diminished. New

vessels were still forming, new granulations were springing up, and the size of the wound was rapidly diminishing.

One hundred and thirty-two hours after the injury, several new blood-vessels had appeared: and the pre-existing ones, especially the veins, were enormously dilated. The wound diminished with great rapidity. At short intervals, little semicircular rills of blood were seen running along the shelving and somewhat precipitous "banks" of the wound. Each little semicircle, or loop, was covered in by a dense layer of small round cells; the deeper layers of cells assumed a spindle form; thus new fibres were formed, and the wound was repaired.

One hundred and fifty-six hours after the injury, the cut was reduced to a minute oval slit, and the floor was quite covered with minute newly-formed fibres, interwoven in all directions. Meantime, new granulations were continually forming along the side-walls or banks of the injured part.

One hundred and eighty hours after the injury, the wound was practically closed.

Fourteen days after the infliction of the wound, the frog was again curarised, the cicatrix examined, and a careful drawing made. It was easy to trace the exact extent of the injury by the lighter colour of the new tissue. The cicatrix was entirely made up of new connective tissue; no regeneration of muscular tissue could be discovered. The new connective tissue appeared to be entirely the product of spindle-shaped cells, interwoven in all directions.

Among other points, Dr. Danforth calls attention to the frequent changes in the condition of the blood-clot in the wounded part, and to the frequency of the escape of fresh masses of blood. At first free hæmorrhage occurred, and the cavity of the wound was speedily filled with a coagulum. In a short time, the red corpuscles had nearly disappeared, an intricate network of fine fibrinous fibres had formed, and in the interstices of this network, multitudes of mobile cells (*i.e.*, leucocytes) had accumulated. A few hours later, this clot had nearly disappeared, the fibres were wanting, except at the periphery of the wound, but a great number of leucocytes still remained and continued their wanderings over the floor of the wound. Several times while the tongue was under examination, the thin walls of the newly formed vessels would yield to the pressure of the blood stream. Hæmorrhage would occur, a fresh clot would form, only to disappear after an interval of a few hours. Meantime, new fibres were forming between the periphery of the clot (or successive clots), and the inner border of the wound, so that the area of the wound was constantly growing smaller.

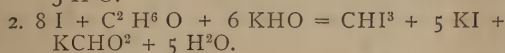
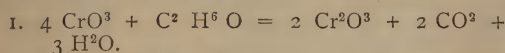
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#### BINZ ON THE EXCRETION OF ALCOHOL THROUGH THE KIDNEYS AND LUNGS.

In a previous communication, Prof. Binz assigned a threefold action to alcohol: stimulating, cooling, and nourishing. It is as to this last that there has been the greatest difference of opinion, its value as a food having been strongly contested, especially by certain English physicians and others, who, as Binz suggests, are more or less under the influence of the prevailing temperance mania. If, as is asserted,

\* *Archiv für Experimentelle Pathologie und Pharmacologie*, 1877.

alcohol leave the organism almost entirely unaltered, then it is not at all likely that it contributes through its oxidation to the maintenance of the heat and energy of the body. But that it is not so excreted, is evident from the diminution in the amounts of urea and carbonic anhydride in the urine and expired air, and from the reduction of temperature that occurs when alcohol is ingested in sufficient quantity. The latest authority on the subject (Boehm, in Von Ziemssen's *Handbuch*, Band xv, p. 91) states that this excretion of alcohol occurs in the breath, urine, and sweat. The assertion that large quantities of alcohol are present in these excreta is founded on the two following reactions: 1, the reduction of red chromic acid into the green oxide; and 2, the transformation of iodine into the easily recognisable hexagonal crystals of iodoform.



Now these colour reactions can only be depended on for the detection of alcohol when no other organic body is present; as saliva, albumen, uric acid, &c., give one or both reactions in the entire absence of alcohol. In his experiments on this subject, Professor Binz employed Geissler's vaporimeter for the quantitative estimation of the alcohol. Its principle depends on the tension exerted on a mercurial column by variable mixtures of alcohol and water at their boiling points. The first series of experiments were made upon the urine of fever-patients who ingested from 20 to 300 cubic centimetres of absolute alcohol in the 24 hours. Before the urine was brought into the receiver of the vaporimeter, it was first treated with caustic baryta, to precipitate the free carbonic acid, and then rendered neutral by careful filtration with dilute sulphuric acid; and to avoid decomposition of the urea, the urine was boiled for only eight minutes. The results obtained showed that, as a rule, but very small quantities were excreted by the kidneys, the average being less than one per cent.

The same is true of the lungs also. After the absorption of 50 cubic centimetres of absolute alcohol, not only was there no smell of alcohol in the breath, but no perceptible trace could be detected by the most careful testing in the air expired from 10 minutes to 5 hours afterwards. The mistake is a general one that alcohol can be smelled in the breath when brandy, rum, or wine has been drunk: the odour is really due to the ethers and oils (fusel-oil, &c.) that are generally present. In these experiments on the breath the nose was clamped, and the expirations were made through a wide tube connected with three Wolff's bottles containing distilled water; in some of the experiments, however, the expiration-tube was joined to a retort provided with a Liebig's condenser. As in the case of the urine, the water in the flasks was titrated first with baryta water, and then with dilute sulphuric acid, to render the fluid neutral. The alcohol (if any) in the filtrate was estimated as before by means of the vaporimeter.

If so little alcohol is eliminated by the warm thin-walled vessels of the lungs, it is very unlikely that it should be excreted by the vessels of the skin.

Taking into consideration these facts: that, as the body contains above 70 per cent. of water, 50 grammes of ingested alcohol would be diluted to 0.5 per cent. (body-weight = 75 kilos); and that at 47° cent. (116.6 Fahr.) a two per cent. solution of alcohol

will only yield 8 per cent. of the total alcohol present: we can readily understand why it is that at the 38° cent. (100.4 Fahr.) of our organism, with the alcohol in the proportion of half per cent., and exposed to the oxidising action of the blood and tissues, so little should be excreted by the lungs or kidneys.

T. CRANSTON CHARLES, M.D.

## LEGRAND DU SAULLE ON AGORAPHOBIA.

M. Legrand Du Saulle (*Annales Médico-Psychologiques*) thinks that this affection is not sufficiently well described by the name agoraphobia, given to it by the Germans, and proposes the term "*La peur des espaces*" as being more expressive and inclusive.

By this name, he says, I designate a peculiar neuro-pathic state, characterised by a feeling of agony and terror without loss of consciousness, quite distinct from vertigo, and produced in the presence of a given space. Dr. Perroud is the only French author who has noticed this disease, and has accepted with Cordès and Westphal the term agoraphobia, which seems inadequate to express the phenomena, as the patients are afraid of space, equally in the street, in the theatre, in a public carriage, in a boat, or on a bridge. *La peur des espaces* shows itself when the patient enters a street; he then experiences a series of symptoms which I shall analyse, and feels that he will never be able to walk up the street. The long walls of the streets in which the shops are shut produce the same fear, which lessens if the patient see a carriage or take a person's arm. These phenomena are produced in church, in the theatre, concert-room, crowded places, and to a less degree in omnibus or cab; and, although the fear is less, yet they believe that people are conscious of their fear. There is the same agony in the presence of a flying perspective, of an extended façade, of a bridge with numerous arches, of a long roof sustained by columns. This agony manifests itself by a sudden feeling of the heart being grasped. The heart beats with violence, the face reddens, there is a feeling of weakness in the lower limbs, the legs tremble, and seem as if they would fail to support the body. The patient also complains of a itching sensation, numbness, and cold. Cordès pointed out that this tremor of the limbs occurs in the most robust people, and he noticed in some profuse perspirations. These patients fear to cry, and yet have an almost irresistible longing to do so. One whom I observed could not go out alone, and presented the reverse of one of Westphal's cases, in that he dreaded to meet a person he knew in a crowd. If he saw one he knew in a crowd he would try to hide, then withdraw, and return to his home by another road. With a full knowledge of this passing aberration the patients are unable to yield to reasoning, which demonstrates to them the groundlessness of their fear; and yet most of the cases have occurred in persons of education and intelligence. They are conscious of all the phenomena of the attack of fear, and those who have experienced vertigo at sea, or in an ascent, or on the edge of a precipice, can distinguish very clearly between the two sets of phenomena. All fear to be considered mad, and are more anxious to conceal than to explain the nature of their attacks. Indeed a patient of Westphal's, under the pretext of fearing an attack of epilepsy, would not go out alone; others, when going down an unfrequented street, would run



behind a carriage, accost anyone who passed, furtively follow another person, or take the arm of a friend. One patient could not go out except in his wife's company, and he always felt more assured if he had a stick or umbrella. Some complained of seeing a space elongate itself indefinitely in an unmeasurable perspective, which seemed to unfold itself in proportion as they advanced. A tree or column dispelled their alarm, or at least procured some relief. Some patients only experience this feeling in cities, and can bear the sight of a wide green plain. In some cases I have observed a lessening of the intensity of those phenomena by the use of spirits, or after a good dinner.

These attacks commence generally in persons who are in good bodily health; and, although existing anterior to any bodily suffering, cannot be regarded as an idiopathic mental state. On the contrary, when the disease is symptomatic, it is attached to other manifestations, and does not constitute a morbid entity, but an incident of the pathological condition, dominant at the time, and it follows the oscillation of the disease which originated it. Some patients have previously suffered from head-affection, sparks before the eyes, or hereditary nervous phenomena. In some cases one sees a nervous predisposition, shown by tremblings, palpitations, and insomnia, without irritability and without intellectual changes. I have also observed in several cases a natural tendency to emotion, sensations of heat at the occiput, and occasional faintings. It is rare to find any morbid state in the sphere of the senses, although some patients have been the subject of motor troubles; yet owing to the extended observation of Westphal, Benedikt's theory that *la peur des espaces* was chiefly due to changes in accommodation has been abandoned. The phenomena often commence very suddenly.

In one case a vigorous man was walking by the sea: feeling indisposed, he rested. Next day he developed the characteristic symptoms of *la peur des espaces*. The next day his health was perfect, and since then he has had *la peur des espaces* without any other morbid manifestation. A patient of Westphal's had to visit an isolated house at the end of a long avenue. When in the avenue he was seized with this agony, and was obliged to return. Since then he has feared streets without shops. Another case commenced slowly in a professor after a kick in the middle of the belly. When slowly developed, the condition is secondary, the mental state being the same, but the mode of origin being different.

Concerning the etiology of the malady, I have very little notion. When deemed idiopathic, it is suddenly developed in the midst of various circumstances, without our being able to assign any cause in the present state of our knowledge. The only etiological idea is that it is consecutive. Nervous predisposition, insanity, and epilepsy in the families of patients affected, have been noted.

It has often been confounded with simple vertigo, with that proceeding from disorder of the stomach (Trousseau), epileptic vertigo, and hypochondria. It differs from simple vertigo, in that there is no rapid movement of objects before the eyes, and no sensation of turning round: from Trousseau's vertigo, in that there is no affection of the stomach, digestion being very good in these patients: from other cerebral states, in that it is produced only under given conditions, without loss of consciousness, and ceases when the external conditions are changed: from hypochondriasis, in that there exists nothing to indicate a morbid psycho-

logical state, and for this reason Westphal has considered it neuropathic. Among the various fantastic theories to which this neuropathy has given rise, M. Benedikt, considering it a variety of vertigo, sought for an explanation in an examination of the eyes, and found in one case a deficient power of converging the eyes. But this want of perfect movement of the muscular apparatus of the eye occurred in a room, as well as out of doors. Westphal had all his patients examined by a practised ophthalmologist, who discovered no ocular lesion. Cordès also sought an explanation in the eyes, and mentions one patient who suffered from dimness of vision before the attack; but the patient seems to have suffered more from uncertainty of what was in his path than from the true *peur des espaces*. Westphal was asked if we were to attribute to *peur des espaces* the phenomena which frequently accompany the aura—viz., tightness about the heart, redness of the face, scintillations, sensations of heat arising in the throat, passing faintness, muscular jerks, &c.; but he thinks that these sets of symptoms are more allied to hysteria and hypochondriasis. Cordès regarded agoraphobia as a functional paralysis, symptomatic of certain modifications, supervening in motor centres, and capable of giving rise to these impressions. In this species there will be an impression of fear which will give rise to the passing paralysis—an effect almost *nil* if the imagination alone enters into action, but carried to a greater degree by the intervention of exterior circumstances.

CHARLES ALDRIDGE, M.D.

## ANATOMY AND PHYSIOLOGY.

BONDET AND CHAUVEAU ON THE RESPIRATORY SOUND, NORMAL AND ABNORMAL.—MM. A. Bondet and A. Chauveau (*Revue Mensuelle de Médecine et de Chirurgie*, March 1877) availed themselves of a somewhat rare opportunity of experimenting on a horse suffering from pneumonia; and they believe their experiments to possess especial interest, as demonstrating the fundamental principles upon which the explanations of the chief respiratory sounds heard over the walls of the chest rest.

The experiments were made in the Veterinary School at Lyons so long ago as 1862, but by some inexplicable oversight they are only now published. The subject was a young and vigorous mare attacked with pneumonia of the left side, attended with such alarming symptoms that death was thought imminent. All over the right side there was considerable increase of the natural inspiratory murmur; no sound with expiration. On the left side, over the upper half, there was also exaggerated inspiratory murmur; over the lower half this murmur was completely abolished, and replaced by a double tubular blowing sound. The inspiratory part of the tubular sound was longer and softer than the expiratory portion, which was louder but shorter.

Auscultation of the trachea showed that the inspiratory and expiratory sounds heard over this tube, though louder, possessed exactly the same characters as the tubular sounds heard over the consolidated lung.

The experiment was commenced by making an incision in the trachea in the middle of the neck, about 20 centimetres long. The lips of this wound in the trachea could be separated by the index finger of each hand, so as to make a large opening in the

tube, more than equal to its transverse diameter : this opening gave free passage to the air during inspiration and expiration, and allowed no air, or only an insignificant quantity, to pass by the larynx. The entrance of blood and mucus into the trachea and bronchi as a consequence of this operation, and the distress of the animal, the convulsive efforts at breathing and the loud, mixed râles which accompanied them, completely prevented the authors from continuing their intended comparison of the breath sounds before and after the operation. The next day, however, finding to their surprise the animal not only alive but better, and the physical signs precisely the same as before the operation, and uncomplicated by râles of any kind, they were able to go on with their experiments. 1. On listening over the hepatised portions of lung with the *trachea closed*, they heard the sounds already described ; with the *trachea opened* the inspiratory tubular sound disappeared, and the expiratory sound was much shorter and weaker. 2. Exactly the same phenomena were observed on auscultating the trachea below the incision, when this was *opened or closed*. 3. On auscultating the sound lung and the sound portions of the diseased one, no alteration was observed in the natural respiratory murmur, whether the trachea were opened or closed ; if anything, the murmur was a little increased in intensity at the moment when the trachea was opened. 4. Sounds were artificially produced in the trachea by introducing into it a caoutchouc tube through the lips of the tracheal wound, and blowing through a membranous reed fixed to its free extremity, thus imitating, as nearly as possible, the conditions under which the voice is produced, with the view of comparing the conducting power of the healthy and the hepatised lung. Over the hepatised portion of the left lung, the sounds were heard with the greatest clearness. Over the healthy portions of lung, the transmission of the sounds was wholly arrested.

These experiments were several times repeated, with the same results. Subsequently, when there arose profuse bronchial secretion, the tracheal sounds would suddenly cease to be heard over the hepatised lung ; at the same time there would be noticed entire absence of the tubular or any other breath sound ; but if the animal coughed and expectorated, all the tracheo-pulmonary acoustic phenomena returned as clearly as before.

From these experiments, MM. Bondet and Chauveau draw the following conclusions. 1. In the horse, healthy lung-tissue is a very bad conductor of sound ; it, indeed, completely interrupts the sounds produced in the trachea. 2. The normal inspiratory murmur originates in the lung-tissue itself ; it arises where it is heard. From other experiments, they conclude that it is caused by the entrance of air into the *infundibules*. 3. Hepatized lung-tissue is a good conductor of sound, since it brings clearly to the ear, applied to the chest, the sonorous vibrations artificially produced in the trachea. The mechanism of this conduction may be thus analysed. 1. The vibrations are transmitted to the pulmonary parenchyma not by the walls of the air-tubes, but by the air contained in them. 2. Arrived at the ultimate ramifications of the bronchia, these vibrations are conducted to the ear by the pulmonary tissue and the chest-wall. 3. The tubular sound heard over hepatized lung is a transmitted sound originating at a distance from the spot where it is heard. 4. The tubular breath-sounds of pneumonia and tracheal sounds are the same phenomena heard at different spots, and

alike produced by the passage of air through the aperture of the glottis. The modified expiratory sound heard when the trachea is opened is produced at the lower orifice of that tube.

I. BURNEY YEO, M.D.

VULPIAN ON THERMAL CENTRES.—M. Vulpian (*Archives de Physiologie*, Nov. and Dec. 1876) in a note on the destruction of the substance of the right sigmoid convolution in a dog, gives a very interesting account of an animal upon which he performed this operation ; it lived about nine months and was then killed for examination. During life, the most remarkable phenomena were the partial paralysis produced, which improved so as scarcely to be noticeable ; the tendency to rotate to the right, which came on after severe cerebral symptoms, due, M. Vulpian says, to encephalitis, and which phenomenon persisted up to the time of death ; thirdly, epileptic phenomena due to the same cause ; and lastly, a noteworthy absence of those thermal alterations signalled by MM. Eulenberg and Landois. The attack of encephalitis, verified *post mortem* by the condition of the whole right hemisphere, occurred from results after the operation ; the corpus striatum and optic thalami escaped participation in the inflammatory changes, and the results of dissection and microscopical investigation proved that a cortical lesion unaffecting these ganglia, can determine a descending atrophy having its seat in the cerebral peduncle, the half of the pons Varolii and the medulla of the same side, and the half of the spinal cord on the opposite side, and affords confirmatory evidence to M. Charcot's observations in human pathology.

ROBERT SAUNDBY, M.B.

VALENTIN ON THE ACTION OF ANTIARIN.—G. Valentin describes in the *Archiv für Experiment. Pathologie und Pharmacologie*, 1877, some eudiometric toxicological researches on antiarin. The experiments were made upon frogs, and a solution of antiarin was employed, containing 1-20th of a milligramme in each drop. Five to twenty drops were injected under the frog's skin, and it was placed in a closed receiver, the air contained in which was analysed from time to time. A preliminary experiment was made in each case with the unpoisoned frog, so as to ascertain the changes produced in the air of the receiver by the healthy animal. Under the influence of antiarin, while the quantity of carbonic anhydride exhaled was, in the first four or five hours, only slightly diminished, there was a great reduction in the absorption of oxygen. A sound frog in a closed receiver exhaled less and less carbonic acid, and absorbed less and less oxygen ; but in the case of the poisoned frog the decrease was much more marked. In certain of Valentin's experiments upon sound as well as unantiarinised frogs, the rather anomalous result occasionally showed itself in the occurrence of an absorption of carbonic acid and an excretion of oxygen. In some of these cases, for the first five hours after the injection of antiarin, the excretion of carbonic acid was but slightly reduced ; then in the following twenty hours there was an absorption instead of an excretion ; while in the next twenty-three hours the excretion was resumed, and steadily increased. Antiarin differs in its action in many respects from curara. Instead of diminishing the absorption of oxygen, curara in small doses causes an increased consumption of this gas ; so that not only in its more powerful action on the heart, but also in the nature of the respiratory exchanges, does antiarin differ from curara. The lessened consump-



tion of oxygen under antiarin is relative as well as absolute. With large doses of either body, paralysis of the nervous structures and of the heart appears before the respiratory changes are well marked. A greater similarity, however, is seen in the action of curara and antiarin upon the gaseous exchanges when large doses of these bodies are given. For the first two or three hours a greater proportion of oxygen is absorbed than of carbonic acid excreted; in the succeeding five to six hours the opposite occurs; and in the last fifteen to sixteen hours the absorption again increases, but more rapidly in a case of curara than antiarin. With the curara, also, the absorption of oxygen is much greater in the first period, and diminishes much less in the second.

T. CRANSTOUN CHARLES, M.D.

GAMGEE AND LARMUTH ON THE ACTION OF VANADIUM UPON THE INTRINSIC NERVOUS MECHANISM OF THE FROG'S HEART.—Professor A. Gamgee and Mr. Larmuth (*Journal of Anat. and Physiology*, vol. xi, pt. ii) experimented with the sodium salts of orthovanadic, metavanadic, and pyrovanadic acids, the solutions being neutral, and containing a quantity of vanadium corresponding to 5 per cent. of anhydrous vanadic acid ( $V^2O^5$ ). In most of the experiments a modification of the method used by Ludwig and Coates was employed, the serum being kept in a state of circulation by means of the frog's heart, except when tracings were being taken. When the serum contains 192 per cent. of anhydrous vanadic acid ( $V^2O^5$ ) the ventricle usually stops within one or two minutes, in a state of rigid contraction, whilst the auricles continue their rhythmical movements, enfeebled, for a considerable length of time. After contraction of the frog's heart, induced by sodium pyrovanadate, relaxation cannot be induced by exciting the vagus. This is, however, not due to any paralysis of the trunk of the vagus or its terminations, for when excited it was able to inhibit the auricular movements, until atropia was added to the serum, when the inhibitory mechanism was readily paralysed without any modification in the effects of the vanadium. Other experiments also showed that atropia does not modify in any way the effects of vanadium. The authors consider that vanadium, at any rate when present in quantity in the blood or serum circulating through the heart, acts as a poison of the contractile tissue of that organ; although, from the continued action of the auricles, long after the ventricle has been arrested, this cannot be its only action.

LARMUTH ON THE POISONOUS ACTIVITY OF VANADIUM IN ORTHOVANADIC, METAVANADIC, AND PYROVANADIC ACIDS.—Mr. Larmuth describes (*Journ. of Anat. and Physiology*, vol. xi, pt. ii) four sets of experiments with these acids on frogs and rats, from which he concludes that the poisonous activity of orthovanadate of sodium ( $Na^3VO^4$ ) is much less than that of the pyrovanadate and metavanadate of the same base ( $Na^4V^2O^7$  and  $NaVO^3$  respectively). In all its compounds vanadium appears to exert its chief action on the medulla oblongata and spinal cord, rapidly impairing the action of the various centres situated in the former, and interfering in the most marked manner with the reflex action of the latter. In all its compounds it is also an irritant to the alimentary mucous membrane, and exerts a definite poisonous action upon the intrinsic nervous mechanism of the heart.

GAMGEE, PRIESTLEY, AND LARMUTH, ON THE DIFFERENCE IN THE POISONOUS ACTIVITY OF PHOSPHORUS IN ORTHOPHOSPHORIC, METAPHOSPHORIC, AND PYROPHOSPHORIC ACIDS.—Dr. A. Gamgee, and Messrs. Priestley and Larmuth (*Journal of Anat. and Physiology*, vol. xi, pt. ii), induced by the results obtained with the different vanadic acids, as described in another paper, experimented on frogs, rabbits, and dogs with the corresponding phosphoric acids. The compounds used were, trisodic orthophosphate ( $Na^3PO^4$ ), tetrasodic pyrophosphate ( $Na^4P^2O^7$ ), and sodium metaphosphate ( $NaPO^3$ ), in the form of standard solutions containing the same amount of phosphorus calculated as anhydrous phosphoric acid. It results from their observations that orthophosphate of sodium is destitute of any marked physiological activity. Metaphosphate of sodium is, they find, a poisonous substance, though not by any means as poisonous as sodium pyrophosphate. The latter salt is very poisonous; in its action on frogs it is more poisonous than sodium-orthovanadate, having about the same intensity as sodium-pyrovanadate. It induced death without materially affecting the irritability of voluntary muscles or of nerves. Its action on the spinal cord, medulla oblongata, and heart, was similar to that of vanadium compounds. Upon the alimentary canal it sometimes produced appearances identical with those occurring in phosphorus poisoning; in other cases it did not exert any marked action on these parts. Where death was delayed, very marked fatty degeneration of the kidneys, of the muscular substance of the heart, and slighter degeneration of the liver, was found. The authors have never succeeded in producing symptoms of poisoning by this salt where it was introduced into the stomach; this, they incline to think, is due to the rapid elimination of the drug, and not to its conversion by the gastric or other ferments into the inert orthophosphate. In conclusion, the authors contend that the inertness of trisodic orthophosphate, compared with the corresponding arseniate and vanadate, may be due to the fact that the former is the more stable compound, and that it may escape all fundamental decomposition in the body, its phosphorus never presenting itself in any chemical operation except in the condition of a saturated compound. In like manner the authors attribute the different actions of the phosphoric acids to the fact that the phosphorus contained in metaphosphoric and pyrophosphoric acids is not as fully saturated as that in orthophosphoric acid.

GAMGEE, PRIESTLEY, AND LARMUTH, ON THE ACTION OF PYROPHOSPHORIC ACID ON THE CIRCULATION.—The authors (*Journal of Anat. and Physiology*, vol. xi, pt. ii) describe the action of pyrophosphoric acid on the circulation in rabbits and frogs. In poisoning by pyrophosphate of sodium there is observed a twofold change in the circulation: 1, a fall in the blood-pressure; 2, a variation of pulse, consisting in a diminution in its rapidity.

The unfrequent and feeble action of the heart cannot originate the diminished blood-pressure, for the latter frequently preceded the former by a few seconds; and although the two phenomena occasionally coincided, in no case was the pulse first affected. Although pyrophosphate of sodium appears to be by no means devoid of action on the cardiac muscle, the authors doubt whether its effects on the beating heart are to be accounted for solely

by its action on the muscular tissue, but suppose that the symptoms are, at least in part, due to lesion of some portion of the nervous system related to the heart and vessels. An experiment in which the drug was administered after division of the vagi in the neck, shows that the retardation and cessation of the pulse are not due—at least not entirely—to stimulation of the vagus centre, whilst other experiments exonerate the vagus-endings and intrinsic inhibitory arrangements connected therewith. The authors therefore believe that, whatever be the changes induced by pyrophosphate of sodium, in virtue of its being a muscular poison, the operation of the salt upon the intrinsic motor ganglia of the heart concurs in producing the heart-symptoms. The action of this salt on the frog's heart prepared for Coates's experiment, is very similar to that of pyrovanadate of sodium described in a previous paper.

**PRIESTLEY ON THE PHYSIOLOGICAL ACTION OF CHROMIUM.**—Mr. Priestley (*Journ. of Anat. and Physiology*, vol. xi, pt. ii) describes the effects on rabbits, guinea-pigs, and frogs, of acute poisoning with neutral chromate of sodium ( $\text{Na}^2\text{CrO}_4$ ), injected either under the skin or into the veins. The action may be regarded as twofold. 1. *On the mucous membranes.* Congestion, and hæmorrhagic infarctions, are found in the internal coat of the stomach and small and large intestine. Their contents consist of a copious fluid, or but slightly viscid grumous material. Congestion of the kidney, with cloudiness and fatty degeneration of its epithelium, and albuminuria with casts, indicate the implication of the renal secretory apparatus. 2. *On the great nervous centres.* The vaso-motor centre is at first somewhat stimulated, the arterial tonus being considerably raised; after a brief period its power declines, and before death the vessels are apparently dilated to the full. The respiratory centre in mammals does not appear to be materially impaired, but in the frog the movements of respiration are the first to cease. The cardiac inhibitory centre in the cord is acted on irregularly. The motor centres of the cerebro-spinal system are manifestly acted upon. Finally, there does not appear to be any direct or special action on the heart.

**BROOKE AND HOPWOOD ON THE CHANGES IN THE CIRCULATION INDUCED BY ESMARCH'S METHOD.**—Messrs. Brooke and Hopwood record (*Journal of Anatomy and Physiology*, vol. xi, pt. ii) the results of their experiments on this subject. Eight sets of observations were made on five vigorous adult males, varying in age from 21 to 27 years. The general results obtained are as follows. 1. Whilst one lower limb is being bandaged, an increase in the pulse-rate always occurs, which may continue for some minutes, but more commonly falls quickly to about the normal rate. 2. During the bandaging of the second lower limb, the pulse again becomes quicker, but the quickening is only temporary; when the pulse falls again, however, it may remain permanently a few beats above the normal. 3. When both bandages are suddenly removed, there is an instantaneous and usually remarkable quickening of the heart-beat, which only lasts for a very short time, and is followed by a fall to below the normal rate, and sometimes by irregular action of the heart.

This quickened pulse-rate on bandaging and unbandaging, the authors attribute in both cases to a diminution in the normal difference of blood-pressure in the two sides of the heart, which is brought about

as follows. On bandaging, blood is expelled from the capillaries and veins of the compressed part, and blood is expelled from the arteries, part of it passing into the capillaries and veins, and part being pushed back into the arteries of the trunk. Owing to the quantity of blood contained in the capillaries and veins being much greater than that in the arteries, and to the presence of valves in the veins, the effect of application of the bandage will be *for a time* to increase the relative pressure on the right side of the heart. The pressure, however, soon becomes equalised, and the pulse falls. On unbandaging, the vascular area is at once much increased; but, owing to the presence of valves in the veins, this merely affects the arteries, in consequence of which the arterial tension diminishes, whilst the venous tension is not immediately touched; the relative pressure in the right heart, as compared with the left, has therefore increased. There is also another factor present in the large quantity of lymph expelled from the limbs and entering the venous system, which, by altering the *quality* of the blood, has, the authors doubt not, a considerable, but at present unknown, influence on the action of the heart.

**RINGER AND MURRELL ON THE EFFECTS OF SULPHATE OF ATROPIA ON THE NERVOUS SYSTEM OF FROGS.**—Dr. Ringer and Mr. Murrell (*Journal of Anatomy and Physiology*, vol. xi, pt. ii), as the results of their experiments, conclude, in the first place, that the late occurrence of tetanus in atropia poisoning is not due to paralysis of the motor nerves, but to the cord being slowly affected. They conclude further that atropia paralyses much more through its depressing action on the spinal cord than on the motor nerves; thus, when the abdominal aorta or femoral vessels were tied before poisoning with atropia, the paralysis set in as early, progressed as quickly, and became as complete in the ligatured as in the unligatured, and consequently poisoned, limb. The question whether atropia acts directly on the cord, or only indirectly through its influence on the heart and circulation, the authors determined by comparing a series of experiments in which they arrested the circulation mechanically, with a series in which paralysis was produced by atropia. Sulphate of atropia caused on an average complete paralysis in 4·5 minutes, whilst mechanical arrest of the circulation required on an average 34 minutes. The conclusion therefore is, that atropia has a direct paralyzing action on the cord, and does not affect it through its depressing action on the circulation. In conclusion, the authors adduce several arguments from the action of atropia in favour of their theory (*Med.-Chir. Trans.*, 1876) that tetanus is not due to stimulation or an excited condition of the cord, but to a diminution or loss of "resistive force" in the reflex portion of the cord. We have in atropia, they think, a drug which quickly paralyses the reflex function of the cord, but requires a much longer time to diminish the resistive power of the cord; hence paralysis precedes, and may even disappear some hours before the onset of tetanus.

E. CRESSWELL BABER, M.B.

**DRESCHFELD ON A NEW STAINING FLUID.**—Dr. Dreschfeld (*Monthly Micros. Journal*) calls attention to the action of eosin as a staining reagent, especially suitable for the nervous tissue. It stains the nuclei, nucleoli, and processes of the ganglion-cells, together with the axis-cylinder of nerve-fibres, of a light pink; areolar tissue of a much deeper tint;



whilst the medulla of nerve-fibres remains unaltered. The special advantages which it is alleged to possess are, rapidity of action, permanency of the solution, clearing properties, good powers of differentiation.

BEVAN LEWIS.

## PATHOLOGY.

**KELSCH AND KIENER ON ADENOMA OF THE LIVER.**—MM. Kelsch and Kiener contribute an interesting article to the *Archives de Physiologie* (September and October 1876) on two cases of true adenoma of the liver. They commence by referring to the published cases, and distinguish between those in which the so-called tumour appears to have been a supplementary lobule of congenital origin, and true new formations, such as that reported by Griesinger. According to MM. Kelsch and Kiener, the growth begins by the augmentation in size of a single acinus, which becomes circumscribed by a zone of embryonic connective tissue, the central vein is dilated and hypertrophied, the rows of hepatic cells thicken and form cylinders anastomosing with one another by processes budding out from their sides; or, by the appearance in an acinus of a miliary nodule composed of a little group of epithelial cylinders, larger, paler, and more readily coloured by carmine than the normal hepatic cells, but continuous with the surrounding trabeculæ, which it compresses and atrophies. This atrophied liver-substance is replaced by a band of connective tissue circumscribing the tumour; the cylinders multiply by budding, and form a regular network, differing from the ordinary type in not converging towards a central vein; the cells have one or more nuclei, with single or double large bright nucleoli; the cell-protoplasm is finely granular, generally destitute of pigment, coloured readily with carmine, and cleared by acetic acid; many cells are in process of proliferation, endogenously, or by fission; there are besides some round cells, two or three times as large as the normal liver-cells, containing many nuclei, and sometimes young cells, some small polygonal cells, and occasionally cells constricted in the middle, the constriction affecting both protoplasm and nucleus. The nodule having developed in either of these ways, is not slow to undergo modifications of structure which differentiate it more decidedly from the normal tissue of the liver; the trabeculæ or cylinders increase in size, and bend upon themselves; some are solid, some are pierced by a central lumen containing fatty granules and scattered polygonal cells. The peripheral cells of the hollow cylinders, and the central cells of the solid cylinders, become filled with fatty granules, and are often coloured by bile-pigment; the blood circulates in irregular crevices, which seem to have no proper walls, but lie between the cylinders; sometimes the vascular network converges towards a central vein with a distinct wall, but usually not. The nodules finally undergo fatty or colloidal degeneration. An interstitial hepatitis accompanies the growth of the tumour; it appears as a perilobular cirrhosis following the course of Glisson's capsule, and rarely passes into the acini. The vessels are numerous, dilated, and hypertrophied, or embryonic in character; in one case there was an extraordinary development of bile-ducts, which were seen to be in direct continuation with the existing hepatic trabeculæ. The authors promise in a future paper to discuss the

bearings of these observations on the development of the liver.

**KELSCH AND KIENER ON THE NEW FORMATION OF BILIARY CANALICULI.**—MM. Kiener and Kelsch (*Archives de Phys.*, Nov. & Dec. 1876), have an article on the recent observations on this subject, adding original matter of their own. They recapitulate as follows.

1. The new formation of a network of intra-acinous biliary canaliculi in hepatitis appears to depend on many conditions, of which the most important and the most general is a parenchymatous alteration characterised by the proliferation of cells, and the atrophic tendency of their protoplasts.

2. The so-called hypertrophic cirrhosis—that is to say, that lesion characterised by an intra-acinous neoplasia of an embryonic and very vascular nature—when it is associated with the parenchymatous alteration, (an association frequently realised in malarial hepatitis), may be considered as a condition favourable to the genesis of the biliary network, on account of the moderate compression which it causes upon the hepatic trabeculæ undergoing cellular hyperplasia.

3. The catarrh of the bile-passages, such as one observes in hypertrophic cirrhosis with jaundice due to biliary obstruction from gall-stones and other causes, ought also equally to be considered as a condition predisposing to the new formation of the intra-acinous biliary network, on account of the special character of the secondary hepatitis which it provokes.

MM. Kiener and Kelsch finally review shortly the physiological relations of their observations, and, referring especially to the hypothesis of the liver being formed on a tubular plan, they point out that these researches show that when the hepatic trabeculæ undergo hypertrophy they tend to form themselves into tubes; when, on the other hand, they atrophy, the tendency is to form biliary canals; and they remark that the tubular hypothesis affords an explanation of these otherwise inexplicable pathological phenomena.

**COHNHEIM AND LICHTHEIM ON HYDRÆMIA AND HYDRÆMIC EDEMA.**—Professor Julius Cohnheim and Herr Ludwig Lichtheim have made (*Virchow's Archiv*, January 1877) a very interesting series of experiments on animals, with the intention of throwing light upon these clinical phenomena. The result of their experiments is that they were unable to produce œdema of the subcutaneous connective tissue by any quantity of fluid injected into the vessels; the fluids varied from distilled water, salt and water, sugar solution, to blood-serum, albumen solution, and pure blood; they also thinned the blood of some animals without adding to its total quantity of fluid. In the last case the result was quite negative as far as œdema was concerned; in all the other cases the effects were to cause great transudation into the intestines and the cavity of the abdomen, to increase the urine greatly, which was clear and pale; to cause enormous secretion from all glands and from mucous surfaces, the glands and mucous membranes becoming swollen; the flow from the thoracic duct was greatly increased, but the lymph vessels of the extremities showed scarcely any more than their normal quantity; but that of the lymphatics of the neck was increased, though not so much as in the thoracic duct. The injection of fluid had only a temporary influence on the blood pressure in both veins

and arteries, but caused a quickening of the circulation of longer duration.

They observed that although hydræmia *per se* appeared unable to produce œdema of the subcutaneous connective tissue, the dogs rendered artificially hydræmic were especially prone to œdema from slight causes, such as painting with iodine, or exposure of their shaved skin to the sun's rays; ligature of the femoral vein scarcely ever caused œdema of the foot in healthy dogs, but under these pathological conditions it very frequently ensued.

They infer from this that changes in the vessels are necessary co-existing factors with hydræmia in the production of dropsy of the subcutaneous connective tissue; and they instance scarlatinal dropsy, in which an alteration in the vessels of the skin coincides with a hydræmia produced by the kidney affection, while in some cases the œdema occurs without any kidney-mischief, scarlatinal dropsy without albuminuria. They believe that the œdema occurring in phthisis, carcinoma, and other cachectic diseases, supervenes when the walls of the vessels have undergone changes corresponding to the general atrophy of the tissues from the malnutrition of the individual.

CARL ON THE MORBID ANATOMY OF THE BRAIN.—Dr. Carl (Virchow's *Archiv*, Jan. 1877) has the following remarks on the subject of leucocytes in the brain-substance.

1. In the cortical substance of every brain, even the most normal, many white corpuscles are to be found.

2. Retardation of the circulation and œdema of the brain bring about an increase in their number.

3. The corpuscles lie in the perivascular sheaths, and in the pericellular spaces.

4. They never enter the substance of the nerve-cells, nor give rise to irritation or nuclear proliferation in them.

5. Brain-phenomena are not caused by their presence, nor by their increase, nor by the retardation of the circulation and œdema, if these take place gently; but are only observed as the outcome of an acute increase in those cases in which the fever process and the causes of the fever have to come into the reckoning.

In a case of croupous pneumonia he has found giant pyramidal cells, such as were described by Krause [and by Batty Tuke, Rutherford, Major, Mierzejewski, and others, in the brains of the insane. *Rep.*]

In a case of chronic emphysema and in one of chronic myocarditis he has observed the bodies described as amyloid [Bucknill and Tuke's *Manual of Psychological Medicine*, 1874, p. 631, *Rep.*] by Virchow, and often found in insane brains.

In a case of acute phosphorus poisoning he found leucin and tyrosin in the brain-substance, with fatty degeneration of the nerve-cells and neuroglia, and large fatty globules in the capillaries, the last-named being like the fatty embola after injuries of bones.

FRIEDLÄNDER ON CHRONIC PNEUMONIA AND PHTHISIS.—Dr. Carl Friedländer (Virchow's *Archiv*, Nov. 1876) gives an account of his prolonged observations of the process of tissue-changes in the lungs of dogs after severing the recurrent laryngeal nerves. The effect of this operation is to permit the entrance of foreign bodies into the air-passages, and hence to set up inflammatory changes in the trachea, bronchi, bronchioles, air-vesicles, and parenchyma of the lung.

He has operated on seventy-two dogs, of which number only nine remained free from pneumonia. The changes he observed were, first, hyperæmia and œdema, which disappeared and passed into red hepatisation, which also might disappear or pass into "transparent grey" desquamative hepatisation, which might go on to atelectasis, or remain as such for as long as a month, but never underwent caseation; in other cases the red hepatisation passed into a small-celled "whitish grey" hepatisation, which rarely resolved itself, but as a rule underwent caseous degeneration. He does not assert that desquamative pneumonia in man never becomes caseous; but, at any rate, he says Buhl's inclusive assertion that desquamative pneumonia only undergoes caseation, cannot, he believes, be maintained. He draws especial attention to the changes in the blood-vessels as the most important feature in the production of caseation; in the round-celled infiltration referred to, the interstitial lung-tissue shares in the process, and the walls of the vessel undergo the obliterative endoarteritis described by him. (See LONDON MEDICAL RECORD, 1876, page 587.) He also gives an account of an interesting development of epithelium in the walls of the bronchi. He has found the same appearances in the human lung in a case of chronic pneumonia. He says the epithelium is in direct continuity with the surface layers, and that such a proliferation is not peculiar to cancer, but may take place wherever granulation-tissue and epithelium are in contact. ROBERT SAUNDBY, M.D.

LEDAIRE ON ANEURISM OF THE RIGHT VERTEBRAL ARTERY.—In the *Presse Médicale Belge*, No. 20, 1876, Dr. Ledaire records a case in which an aneurism was situated on the right side of the spinal cord, close to the fork-like junction of the two vertebral arteries to form the basilar. The upper part of the enlargement was regular, the lower sac-like in form, and the size of the whole tumour about that of a hazel-nut. On the corresponding portion of the left vertebral artery there were also two dilatations of small size. The cause of these changes was found to be an atheromatous process which had been going on in the walls of the vessels. The patient was sixty-three years of age, and had given no evidence of disease. Death occurred suddenly, from hæmorrhage into the meninges of the brain.

#### RECENT PAPERS.

Histological Observations on some Tumours. By Professor P. Martinetti. (*Commentario Clinico di Pisa*, No. 1, 1877.)  
The Pathology of Paralysis of the Brachial Plexus. By Dr. E. Remak. (*Berliner Klinische Wochenschrift*, February 26.)  
Medullary Cancer of the Stomach, Liver, Mesentery, and Omentum. By Dr. J. H. Brown. (*Cincinnati Clinic*, February 17.)

#### MEDICINE.

ROBINSON ON EFFUSIONS IN THE PLEURA.—Dr. Beverley Robinson contributes a paper to the *New York Medical Record*, on some conditions, physical and rational, in effusions of the pleura. In the number for Feb. 3rd, 1877, he especially discusses the question of thoracentesis, and inquires into the causes which have produced sudden death after this operation. Dr. Robinson maintains that thoracentesis should be performed in all cases as soon as the quantity of effusion is appreciably large,



and he attributes all the fatal accidents that have occurred after the operations, (a) to its not having been performed early enough; (b) to too large a quantity of fluid having been removed at once, or with too great a rapidity; (c) to subsequent injections into the pleura having been too long persevered with, or to their having been made with too great a force; to the general rule, "that in all cases of pleuritis in which fluid is present, we should, without hesitation, make use of the aspirator to withdraw the morbid effusion." Dr. Robinson would only affix one limitation and one exception. The *limitation* is, that "whenever very large or excessive quantities of fluid are present, it is wiser to puncture the chest on two successive occasions, so that all risk of acute œdema of the lung on the afflicted side shall be avoided." The *exception* is, "that if the patient be very much enfeebled, and the effusion be small or moderate, we may, with advantage, delay the operation during a brief period, until his forces have been somewhat re-established". R. DOUGLAS POWELL, M.D.

LEGROUX AND HANOT ON ALBUMINURIA IN ENTERIC FEVER.—In the *Archives Générales de Médecine* of Dec. last, MM. Legroux and Hanot give an account of albuminuria in enteric fever. Their article refers more especially to five of sixteen cases treated in La Pitié, in Prof. Lasègue's wards.

They divide their sixteen cases into two classes. In the first class there were eleven cases, of which three died; and in these eleven there was little, if any, albumen in the urine during the course of the disease. In the second class there were five cases, all of which died, and in these there was found, after the sixteenth day of illness, a copious albuminuria, persistent until death, with tube-casts (granular and fatty), and also free fat-globules. This appearance of albuminuria coincided with the first appearance of severity of the illness from which the patient was suffering.

The most important changes found at the necropsy are said to have been in the kidneys, which were large, pale, and about five times (?) the average weight (*cinq fois le poids moyen*). The epithelium, especially in the tubuli contorti, was in a condition of granular and fatty degeneration.

There were also important changes in other organs, e.g., the heart and liver; but these are said to have been less marked than those in the kidneys.

Peyer's patches were affected in four of these cases; but in one case the diagnosis of enteric fever seems doubtful. From the absence of a complete account of the condition of Peyer's patches in the notes of the necropsy, we are inclined to think the authors supposed the kidney-trouble detected during life to be the chief disorder from which the patient was suffering, enteric fever being quite of secondary importance. We think this the more, since it is stated that in one patient the symptoms of enteric fever disappeared, although the albuminuria continued.

The authors are unable to state if this kidney-affection is due to nephritis or is merely a degeneration of renal epithelium. They think it "special", and assign to it an important share in the production of their exceptionally high mortality (50 per cent.); but at the same time add that the serious, and ultimately fatal symptoms, arising after the appearance of albuminuria, were in no way due to uræmic poisoning.

[It is generally allowed that any case of enteric fever, with copious and persistent albuminuria, is severe, and likely to terminate fatally. At the same time we might suggest that, if patients with diarrhœa

be purged (as in case two), and if patients with a practically normal temperature be treated with cold baths (case five), the authors are likely to be correct if they attribute their high mortality to something else than kidney-disease.—*Rep.*]

FRANK T. TWINING, M.B.

PETER ON SEVERE DIPHTHERITIC PARALYSIS CURED BY THE CONTINUOUS CURRENT.—Professor Peter, of the Hôpital La Pitié, has had recently under his care a patient affected with paralysis following very acute diphtheria, which is remarkable, not only on account of its severity, but from the success of the treatment employed. (*Journal de Médecine et de Chirurgie Pratiques*, March 1877.) The woman was taken, about the middle of last November, with a slight sore throat, probably diphtheritic from the account which she gave of it, which lasted for about twelve days, but did not oblige her to stop work. About a month after the commencement of this attack, on Dec. 20, after a violent fit of passion, the patient felt some signs of paralysis. Paralysis of the soft palate and of the pharynx was complete; food returned by the nose, and swallowing was impossible. Articulation was abolished. There was some marked weakness of sight, and a slight degree of amblyopia. The woman remained thus during seventeen days without taking any food. She was brought to the hospital on January 4, in a very enfeebled state. Œsophageal catheterism was practised, and nourishment given by this means, which had to be continued for five weeks. It was not till fifteen days after her admission that electrification was commenced, on account of want of the necessary apparatus. The continuous current was employed, applied to the neck for about an hour each day. At the end of three weeks the symptoms of paralysis amended, the patient commenced to eat, and the voice returned at the same time. When the case was reported, the cure was all but complete: but the treatment was continued because the voice was still affected, and liquids often returned by the nasal fossæ at the moment of deglutition.

This case is remarkable on more than one account. We see in the first place, that this severe paralysis succeeded to a sore throat so mild that the patient did not even stop work. The gravity of the paralysis is also quite exceptional. It is extremely rare to see the paralysis not only involving the soft palate, but even all the pharyngeal muscles, and to be so complete as to abolish its functions. It is also certain that, if this woman had not been fed by means of the Œsophageal sound, she would have died of starvation, since the paralysis lasted for some weeks after this mode of alimentation had been begun. Lastly, the good effects of this treatment must be noticed. The continuous current constitutes, indeed, the best method of treatment for paralysis following diphtheria.

W. DOUGLAS HEMMING.

CICCONE ON A CASE OF RUPTURE OF THE GALL-BLADDER.—Dr. Ciccone gives the history of the case in *L'Indipendente*, 1876. The subject was a countryman, aged 51, who had never suffered from any illness. One day, two hours after his usual meal, he was suddenly seized with violent pain in the abdomen, and vomited his food along with a watery and a greenish fluid. When seen, there was much depression; he had profuse cold sweats, and lay on his back with the legs drawn up; the abdomen was contracted, the breathing was slow and deep; there was no trace of wound. The temperature was lowered,

the pulse small and intermittent; he had a sensation of pain all over the abdomen; there was neither meteorism nor tympanites. In other respects there was nothing abnormal. By a process of exclusion, Dr. Ciccone arrived at the diagnosis of rupture of the liver, although there was no wound; and thought that it might have been the result of some forcible efforts which had not attracted the patient's attention. In a short time he had repeated fecal vomiting and obstinate constipation; at the end of forty-eight hours, general icterus appeared, and was followed by death, the intellect being retained to the last.

At the necropsy, the gall-bladder was found to be detached from its fossa in the under surface of the liver; it was attached only by a thread of peritoneum, and presented a recent laceration, without any signs of ulceration.

A. HENRY, M.D.

HERMET ON APHONIC PECTORILOQUY.—Dr. Hermet, in his *Thèse de Paris* (7th Dec. 1876) has studied the new indication, given first by Baccelli, then by Gueneau de Mussy, for the diagnosis of the nature of pleural effusions, and has proved its presence in pulmonary affections. The *résumé* of this memoir is as follows. Aphonic pectoriloquy is the clear distinction of the voice, when the patient auscultated speaks in a low voice. It exists in all the pulmonary affections associated with induration; induration is the condition *sine quâ non* of its production. Thus we hear it in the first stage of pulmonary phthisis, in the second stage of pneumonia; if, in the latter case, the *souffle* persist. It is also heard in the excavation stage of pulmonary phthisis, but with a peculiar sound. In the first stage of phthisis, when it can only be suspected by antecedents and certain functional troubles, aphonic pectoriloquy may possess a real diagnostic value. It is also heard in pleural effusions, and in pneumothorax. Compression of the pulmonary tissue by effusion in the case of pleurisy, and by air, or the liquid, or both together, in the case of pneumothorax, may, perhaps, explain the mechanism of its production. Finally, as MM. Baccelli and Gueneau de Mussy have proved, it helps in making the diagnosis of the nature of pleural effusions; when aphonic pectoriloquy exists, the effusion is serous; where it is wanting, the effusion is purulent.

#### RECENT PAPERS.

- On Epidemics of Jaundice. By Dr. Köhnorn. (*Berliner Klinische Wochenschrift*, March 5.)  
 The Treatment of Icterus Catarrhalis. By Dr. E. Krull. (*Ibid.*, March 19.)  
 A case of Morphinism. By Dr. Hirschberg. (*Ibid.*, March 26.)  
 On Diphtheria in general; and especially on Diphtheritic Angina and on Croup. By Dr. F. Ghiglia. (*Archivio Clinico Italiano dei Medici Condotti*, February.)  
 Observations on Diphtheria. By Dr. F. Alessandri. (*Ibid.*)  
 Tuberculosis of the Excitable Zone of the Right Cerebral Hemisphere. By Dr. Burresi. (*Lo Sperimentale*, March.)  
 Pathogeny of Epilepsy; Epileptiform attacks following injuries of the Anterior Cerebral Convulsions. By Dr. Morselli. (*Ibid.*)  
 Insanity and Diabetes. By Dr. Cotard. (*Archives Générales de Médecine*, March 1877.)  
 Hysteria and Catalepsy. By M. Eugène Minod. (*Ibid.*)  
 On Alcohol as a cause of General Glandular Hypertrophy and of Leucocythæmia. By Dr. Paul Thoser. (*L'Union Médicale*, March 10.)  
 Typhoid Febricula and Typhoid Fever in Nancy. By Dr. Gross. (*Revue Médicale de l'Est*, March.)  
 Note on two cases of Phlegmasia Alba Dolens consequent on Typhoid Fever. (*Gazette Médicale de Paris*, March 12.)  
 On Epileptics. By M. Legrand du Sault. (*Gazette des Hôpitaux*, March 20.)  
 On Incomplete Hemianæsthesia of Cerebral Origin. By Dr. Tripier. (*Gazette Médicale de Paris*, March 11.)

#### SURGERY.

OLLIER ON EXCISION OF THE EPIPHYSAI CARTILAGES FOR ARRESTING THE GROWTH OF BONES AND CORRECTING CERTAIN DEFORMITIES OF THE SKELETON.—M. Ollier, from a series of experiments on animals, has, besides confirming the fact that the long bones increase in length by means of the epiphyasal cartilages (*cartilages de conjugaison*) (*Revue Mensuelle de Médecine et de Chirurgie*), arrived at the following conclusions.

1. Removal of the whole of the epiphyasal cartilage leads to absolute arrest of development.

2. Partial removal leads to unequal development, and more or less curving of the bone.

3. Irritation of the cartilage is followed by the same results as removal, if the irritation be sufficient to destroy the cartilage or cause decided changes in the nutrition of its elements. Such changes follow inflammation of the ends of the diaphysis, and especially of the spongy tissue adjacent to the cartilage, and consist chiefly of proliferation of the cells, which either further degenerate into pus, or form granulation-tissue. Cartilage thus changed never recovers its previous healthy condition. Direct irritation of the cartilage prevents any further growth of the bone, but indirect irritation leads to increase in both the length and thickness. Indirect irritation may be set up by lacerating or cauterising the periosteum, perforating the osseous tissue at the ends of the diaphysis, or crushing the medulla.

The author has, furthermore, definitely made out that the two ends of a long bone do not take an equal share in increasing its length. For example, the ends of the bones which meet to form the elbow-joint contribute but little to the lengthening of the arm and forearm, whereas the ends of the bones forming the knee-joint especially contribute to the lengthening of the lower extremity. Knowing this, we can calculate approximately the amount of shortening that will follow the destruction of the different cartilages.

When this cartilage, lying between the diaphysis and epiphysis, which leads to the increase in the length of the bones, has been by any means completely destroyed, the bones are short and stunted; when it is only partially destroyed, they are more or less bent. Again, if the epiphyasal cartilage of one or two parallel bones be destroyed, and if the other continue to grow, it will form an arc, the chord of which will be formed by the shortened bone: for example, if the lower epiphyasal cartilage of the ulna be excised in a dog, the paw will deviate to the ulnar side, because of the increase in length and bending of the radius. This deviation may be arrested by excising the cartilage at the end of the radius as well. Further, if in a single bone, such as the femur, the outer part of the epiphyasal cartilage be destroyed and the inner part left untouched, the bone will become curved on account of the increase of the internal condyle, and this will lead to a projection inwards of the knee, similar to what we find in long-standing cases of genu valgum.

In one case (reported in the *Lyon Médical*, Dec. 22, 1872, by M. Poncet) of arrested development of the ulna due to osteitis in childhood, the radius was curved, the concave surface looking inwards, its head was dislocated outwards, and the hand remained in a supine position. The ulna of the healthy arm measured nine inches in length, but the ulna of



the deformed arm only measured four-and-a-half inches. In another case, the radius of the one side was nearly two inches shorter than the radius of the other, and the ulna, by projecting an inch beyond the distal end of the radius, inclined the hand to the radial side. In one case of arrested development of the radius, a partial excision of the epiphysal cartilage of the ulna greatly improved the position of the hand.

Passing to the lower extremity, one case is mentioned in which the bones were irregular on account of infantile paralysis, and the condition was improved by irritating the diaphysis of the tibia, and thus increasing its length. In three cases, the lengthening of the tibia was so marked after the irritation that slight valgus resulted, necessitating a similar irritation of the end of the fibula. In some instances, the fibula is relatively so long that its head becomes displaced upwards, its lower end downwards, and thus, displacing the astragalus, leads to inversion of the foot. This deformity is best treated by removing the cartilages from both ends of the fibula.

J. C. EWART, M.B.

RODMAN ON THE TREATMENT OF CERTAIN INJURIES OF THE HEAD, ACCOMPANIED BY LESIONS OF THE BRAIN AND ITS MEMBRANES.—In the *American Journal of Medical Sciences* for Jan. 1877, Dr. Rodman, of Frankfort, Kentucky, writes to say that, although "most surgeons are agreed on the treatment of compound fracture of the skull with depression, the danger of making a compound out of a simple fracture has been greatly overrated by the older writers, and that we of the present day have blindly accepted their views."

The paper relates chiefly to depressed fracture. If the fracture be compound, the existence of depression is, he says, easily ascertainable, its elevation the admitted duty of the surgeon, and the direct consequence then the clear salvation of life.

Why then, he says, is the patient to be exposed to the immediate and remote dangers of depressed bone, simply because the fracture is simple? If there be simple fracture, with symptoms of compression, and the existence of depression be doubtful, why may not the surgeon cut down and see? His incision, *if not improperly treated*, can do no harm; if he find depression and elevate, he may save a life.

Even if there be no compression symptoms, but depression exist, or be even suspected from the circumstances, he urges incision, as harmless even if found to have been unnecessary; but of vital importance if leading to the detection and elevation of depressed bone, and the consequently improved hope of recovery by the prevention of speedy death or disastrous mental disease.

He fortifies himself with the tacit consent of Gross and Erichsen, "who have, probably, more influence on the practice of surgery in America than any other writers or teachers;" but regrets that the view for which he contends is rather conceded than urged by these two great authors, and, he thinks, not a little obscured by an equal concession of the old do-nothing practice of Dupuytren, Cooper, and Abernethy.

He quotes six cases of his own, in three of which success attended the early incision, exploration, and removal of bone, in simple and depressed fracture, the latter only capable of being suspected from the known severity of the blows endured. In the other three, which were fatal, operation was declined, postponed a month, and insufficiently carried out respectively (this last was a punctured fracture, a stabbing

case, and necessarily compound, but a good case in point).

He quotes, also, numerical statistics, to prove that more cases have been fatal under the expectant method, as applied to simple depressed fracture, than under operative treatment, when the fractures have been at once compound, and, as a rule, of more serious injury.

[The paper occupies ten pages, and is well worth reading. With the view there contended for, the reporter sympathises warmly; but prefers a strictly open treatment of the wound, sparingly anointed with oil or grease, devoid of irritating admixture, and an absence of all dressings, in preference to the sutures, cold water dressing, and compresses used by Dr. Rodman.—*Ref.*] RUSHTON PARKER.

WOLFLER ON DISPLACEMENT OF KIDNEY: PELVIC ABSCESS: PUNCTURE BY THE RECTUM: URÆMIA: DEATH.—Dr. Wolfler relates the following case in the *Leipzig Centralblatt*. The patient was forty-five years old, and had passed no urine for five days. The illness began with sickness and a rigor. The day after no urine could be passed, and the catheter brought away blood only. The desire to urinate was intense, but there was no prominence at the vesical region. The point of the catheter was directed from the median line to the right or left; by deep pressure upon the abdomen percussion gave a dull note, but unless pressure were used the note was tympanitic. The right wall of the rectum was pushed forwards by a fluctuating tumour. Puncture *per rectum* brought away a quantity of brownish green liquid, tenacious, odourless pus. The catheter afterwards brought away a quantity of dark brown urine. The necropsy showed that the right kidney was situated abnormally low down, and had degenerated into a sac, which had compressed not only the right but also the left ureter.

A. SHEWEN, M.D.

SANDS ON PERFORATING FRACTURE OF THE ACETABULUM.—At a recent meeting of the New York Pathological Society (*New York Medical Review*, February 10), Dr. Sands presented a specimen with the following history. He was asked by Dr. Levings to see a gentleman, aged 66, who had fallen in a dumb-waiter well on Thursday previous. When Dr. L. was called, the patient was suffering so severely from shock that a thorough examination was not advisable; still he entertained the suspicion of the existence of a fracture of the neck of the femur. Within twelve hours after the accident the patient began to vomit at short intervals. This symptom continued until his death. When Dr. Sands saw the patient forty-eight hours after the injury, he noted the facts already observed by Dr. Levings, viz., that the limb was not shortened nor everted, and that the heel could be elevated; he did not make a very careful examination of the hip. The limb was capable of free rotary motion; there was no crepitus, and the trochanter described the arc of a circle. In the left groin there was a movable tumour, two inches in length and an inch in breadth, situated below Poupert's ligament, just over the saphenous opening, and possibly a little external to the vessels. Although it had the seat of femoral hernia, it was soft and painless on pressure, and received no impulse on coughing. The patient assured both Drs. Levings and Sands that the tumour had existed for twenty years. The abdomen was slightly swollen, but no evidences of internal tumour were found. The vomited material consisted of mucus and bile. The pulse was slightly

accelerated, and the temperature a fraction over 98 deg. F. On the third day after the injury, the pulse temperature increased, and continued to do so. Associated with these symptoms were tympanites and other evidences of peritonitis. The diagnosis was traumatic peritonitis. This opinion was strengthened by the subsequent passage *per anum* of decomposed blood. The treatment consisted of opium internally, and fomentations externally. He was suddenly seized with collapse, and died the day following.

At the autopsy the tumour of the groin was found to be composed of adipose tissue merely. This traumatic peritonitis was discovered to be caused by an extensive fracture of the pelvis, associated with the penetration into its cavity of the head of the femur, through its acetabulum. After the caput femoris had been buttoned through in this manner, it afterwards had allowed the limb to maintain its relatively normal position with the hip proper.

COLEMAN ON A CASE OF SLOUGHING OF THE ABDOMINAL WALL.—Dr. J. S. Coleman, of Augusta, Georgia, relates the following case in the *New York Medical Record* for February 3. A child three years of age, frail and delicate, and with occasional attacks of malarial fever from its birth, was struck, standing, in the lumbar region by the back of a chair in which was seated another child of about the same age. It fell to the floor with the weight of both child and chair upon its loins. At the time, the child was not apparently seriously injured. Dr. Coleman was called on the fifth day after the accident. He found the little patient prone upon the bed, with its knees well drawn under the body, and the abdomen supported upon a pillow. The loins were considerably bruised, and the right lumbar region exquisitely tender, swollen, and indurated. At his visit on the morning of the eighth day he noticed that the child was supine in its mother's lap, and that there was a broad dark mark across the abdomen below the umbilicus, presenting the bluish-black aspect of senile gangrene; it was of irregular form, six inches in length and two inches in breadth; the greater portion, two-thirds to the left of the median line, and the other third upon the right. The entire surface was bordered by a bright areola about half an inch wide. After a few days, minute vesicles appeared upon the central portion; these were soon converted into large bullæ, containing fetid sanious serum. The line of demarcation was, after a few days, more fully formed, and the slough rapidly separated. The cicatrisation was complete in a few weeks, under the constant use of a solution of boracic acid.

With regard to the explanation of the case, Dr. Coleman says that the only tenable theory to his mind is that of an injury to those branches of the vaso-motor system of nerves which supply the portion of the abdominal integument implicated in the slough, producing infarction or a stasis of the circulation in the part sufficient to cause its death.

HOMANS ON AORTIC ANEURISM TREATED BY ELECTROLYSIS; FAILURE.—Dr. John Homans reports the following case (*Boston Medical and Surgical Journal*, November 16, 1876). A man, aged 50, was admitted to the hospital with an aneurism of the arch of the aorta. The tumour had pushed through the walls of the thorax in the left upper pectoral region, forming an external pulsating swelling as large as a man's fist. Five gilded needles, insulated to within a quarter of an inch of the point, were inserted about an inch and a quarter beneath

the skin, and when all were inserted they described a circle round the apex of the tumour. The battery used was an ordinary Stöhrer's, the needles being connected with the positive pole, while the negative pole was joined to a large metallic disk which was covered with a compress wet with salt and water. This was applied to the epigastric region, and moved occasionally as the skin beneath it became irritated. The number of cells used varied from eight to ten, which were all the patient could bear without much pain. The needles were kept in the aneurism during forty minutes; but as, after a time, the skin around some of them became either bluish or pale, and somewhat sunken, over a circle about two millimetres in diameter, these were removed and fresh ones (of steel) were inserted at neighbouring points, ten punctures being made in all. Bubbles of gas and a little dark blood followed the needles as they were withdrawn. The patient bore the operation well, but became a little faint afterwards. The next day the pain through the back and down the arm was less. The tumour looked somewhat blue. Two weeks later electrolysis was repeated; the tumour was then somewhat larger than when the patient entered the hospital. The operation was repeated in a manner similar to the first, excepting that steel needles were used. The depths at which the needles were inserted were from one and five-eighths to two inches.

The patient left the hospital at the end of three weeks, convinced that his pain was less than when he entered. The tumour, however, was larger, and the impulse was about the same.

#### RECENT PAPERS.

- Rare and Rapidly Progressing Form of Pustulous and Tuberculous Syphilis. By M. Gosselin. (*La France Médicale*, January 24.)  
On Ectrophy of the Male Bladder; a new Plastic Operation. By M. Léon Le Fort. (*Bulletin Général de Thérapeutique*, February 28.)  
Polype of the Nose of thirty years' standing; Extirpation and Cure. (*L'Année Médicale*, February 1877.)  
Case of Spontaneous Perforation of the Popliteal Artery by a White Swelling of the Knee. By M. Bard. (*Lyon Médical*, March 18.)  
Transmission of Syphilis by Tattooing. By M. Simonet. (*Le Progrès Médical*, March 17.)  
The Diagnosis and Pathogeny of Inflammation of the Submaxillary Gland; Salivary Calculi. By M. S. Duplay. (*Le Progrès Médical*, March 3.)  
The Application of the Bloodless Method to Operations on the Lips and Cheeks. By Dr. C. Langenbuch. (*Berliner Klin. Wochenschrift*, April 2.)  
A Contribution to the Endolaryngeal Operation on Polyphi of the Larynx. By Dr. Beschorner. (*Ibid.*)  
The Treatment of Wounds. By Dr. Dumreicher. (*Wiener Medizin. Wochenschrift*, March 3 and 10.)  
Operations for Strangulated Hernia. By Dr. Graham N. Fitch. (*American Practitioner*, March.)  
A New Method of obtaining Extension and Counterextension in Fractures of the Femur. By Dr. J. H. Churchill. (*New York Medical Record*, March 17.)  
Practical Points in the Electrolytic Treatment of Cystic and Fibroid Tumours. By Dr. G. M. Beard. (*New York Medical Record*, March 17.)

#### MATERIA MEDICA AND THERAPEUTICS.

BINZ ON THE MODE OF ACTION OF NARCOTICS.—The last quarterly number of the *Archiv für Exper. Pathol. und Pharmacop.* contains an article on this subject by Dr. Binz. Funke long ago affirmed that brain-substance in a state of rest was alkaline, but acid after a period of activity. Durham regarded this acid condition as hindering the oxidation upon which the function of the brain depended. Heynsius, on the other hand, looked upon it as retarding the transudation of albumen into the brain-



substance. Of more recent date is Preyer's theory, that sleep is due to a tiring of the brain through an accumulation in it of the products of tissue-waste, which seize upon the oxygen destined for the brain, and thus render it unable to perform its function. But relying on the changes produced by the action of morphia, chloral, ether, and chloroform on fresh pieces of living brain—coagulating and darkening the intercellular substance; and taking into consideration the properties possessed by quinine and other allied alkaloids, of entering into a kind of temporary combination with certain forms of protoplasm, and thereby diminishing its oxidizing power, Binz supposes that these bodies possess strong affinities for the grey substance of the brain, and therefore enter into combination with it, and that, through the resulting alterations in its tissue-changes, it is unfitted to perform its function of wakefulness. Chloroform and ether form less stable combinations, and are, accordingly, more fleeting in their action than morphia or chloral. His experiments further show that sleep is not necessarily preceded by diminished blood-supply, but that this follows rather as the consequence, than as the cause, of the narcosis. Like other resting organs, the brain in a state of sleep contains less blood than in the active condition.

T. CRANSTOUN CHARLES, M.D.

PERCY ON THE USE OF VITALISED HYPHOPHOSPHATES.—Dr. Samuel R. Percy, of New York, in an essay published in the *Transactions of the American Medical Association*, alleges that he has demonstrated that phosphorus exists in the brain as an alkaline hypophosphite; and details a method for the production of the same in the laboratory, giving also a quantitative analysis.

He is of opinion that this form would be the most easily assimilated of all the preparations of phosphorus, because it most nearly resembles that which is found to be most active within the animal economy. The phosphates which enter the system by means of impure water, Dr. Percy considers to be from their origin liable to produce physically unclean and morally impure blood, and argues that they require 'vitalising' before they can become useful. The 'vitalisation' process is apparently so called, from its conversion of phosphates into that state which the natural chemical elaboration of vegetable and animal life confers upon them.

HORATIO DONKIN, M.B.

WARNER ON VENESECTION.—In an article in the *Birmingham Medical Review* (The Value of Venesection in the Treatment of Disease) Dr. Warner discusses the position of bleeding as a therapeutic agent. He would use it chiefly as a means of relieving tension by withdrawing blood from certain portions of the circulatory system, viz., the systemic veins, the right heart, the pulmonary artery and its branches, the bronchial veins and capillaries, and indirectly the left heart by means of the systemic capillaries. Venesection may thus be called for in cases where obstruction to the pulmonary circulation with collateral œdema on one side of the chest arises from disease in the other, as, for instance, in pleural effusion, pneumonia, pneumothorax, and deformities of the chest; it may also be practised with benefit when the circulation through the lungs is impeded by emphysema, bronchitis, laryngeal obstruction, or disease of the left side of the heart. He recommends it as a palliative in croup and pleuritic effusion, and cases are given illustrating its employment in heart-

disease, pneumonia, hæmoptysis, puerperal convulsions, etc. Dr. Warner regards venesection as useless in inflammation for antiphlogistic purposes, unless in the earliest stages, when it may arrest exudation.

F. TAYLOR, M.D.

VON WECKER ON ESERINE.—In the February number of Dr. Zehender's *Monatsblätter*, Dr. Von Wecker has an interesting paper on the therapeutics of eserine, which he finds to be a most powerful antiseptic, preventing the formation of pus in suppurative diseases of the cornea, and after cataract operations, when the cornea or iris shows a tendency to suppurate. He records a case in which the formation of pus was prevented at once by its vigorous application, after the anterior chamber had been opened twice for its evacuation. It is said to exert a most beneficial influence in serpiginous ulcer. Instillation should be effected immediately after Sämisch's operation.

The solution used must be freshly prepared, and of a pale yellow colour. The rose colour, or deep red, which it afterwards assumes, probably indicates the formation of an oxide, rubi-eserine, which has no myotic and but little antiseptic effect. A one per cent. solution was employed.

B. THOMPSON LOWNE.

GUBLER ON THE RADICAL TREATMENT OF FACIAL NEURALGIA BY ACONITINE.—At the meeting of the *Société de Thérapeutique*, January 23, 1877 (*Paris Médical*, Feb. 15, 1877), M. Gubler said "I do not know a neuralgia of the fifth pair, even a tic-douloureux, which has resisted aconitine." In support of this statement, M. Gubler reported many curious facts. He gave, among others, the history of a patient who came to him screaming. He had suffered day and night for three months. With aconitine the pain completely disappeared: tired of taking it, the patient ceased the remedy; the neuralgia reappeared, and yielded anew to the aconitine.

M. Gubler saw besides, some years ago, a patient afflicted for a long time with an obstinate trifacial neuralgia, for which Nélaton had performed resection of all the nervous filaments; this had only given temporary relief. This man talked of killing himself when, under the advice of Debrut, he was given the aconitine of Hottot. The pain was absolutely suppressed.

*Dose of the Remedy.*—According to Gubler, the aconitine of Hottot and Liégeois is excellent, and that of Dugumel is very powerful. Neither granules nor pilules suit the taste of the learned professor of therapeutics, he preferring a solution of aconitine. If the solution of nitrate of aconitine be used, half a milligramme ( $\frac{1}{100}$  grain) of the nitrate may be given, which is equivalent to a quarter of a milligramme ( $\frac{1}{250}$  grain) of aconitine. The dose may be pushed much further. In the first patient mentioned above, the pain did not completely disappear until the dose had been progressively increased up to six milligrammes ( $\frac{1}{15}$  grain). In the patient on whom Nélaton had operated, five milligrammes ( $\frac{1}{20}$  grain) of aconitine of Hottot was given. With three milligrammes the pain returned, but with five milligrammes the patient suffered no more. If pilules or granules be used, one may be discouraged by the nullity of their effect for a certain time, and thus led to give too large a dose. The nullity of effect results, in fact, from non-absorption. This does not happen with a solution.

**Troubles caused by Aconitine.**—M. Gubler has seen only one case in which any trouble was caused by the aconitine of Hottot. A patient, who had taken  $1\frac{1}{2}$  milligrammes in sixteen hours, lost consciousness. M. Gubler thinks that aconitine is too much mistrusted, as it offers no danger when prudently managed.

It will be better to abstain from its use in persons affected with heart-disease. In support of this statement, M. Gubler gives some cases in which cardiac troubles were present.

**ROBIN ON SALICYLIC ACID IN TYPHOID FEVER.**—M. Robin read a communication on this subject at the meeting of the Société de Biologie, Jan. 27, 1877. He showed from figures in his hand that the remedy almost constantly diminished the quantity of urine excreted; as the result of its use, the quantity of indican is increased. Its elimination may be very slow, lasting seven or eight days. Lastly, M. Robin noticed an inconvenience which the remedy possesses: it produces sometimes ulcerations in the back of the pharynx, and even consecutively oedematous laryngitis. M. Robin recommends its administration in typhoid fever only in very dilute solutions, lest the diuresis be too much arrested. In answer to M. Charcot, M. Robin said that he had once observed buzzings in the ears as the result of the use of salicylic acid. M. Leven thought that the remedy should not be given in typhoid fever unless in small doses, in large ones it caused disorders of the digestive organs, which were particularly dangerous in this affection.

**VERNEUIL ON SUBCUTANEOUS INJECTION OF ETHER IN COLLAPSE.**—The following cases, in which hypodermic injection of ether was employed, occurred in the practice of M. Verneuil at La Pitié (*Journal de Médecine et de Chirurgie Pratiques*, March 1877). A young boy, on whom M. Verneuil had operated for naso-pharyngeal polypus, the operation being a long and difficult one, suffered a considerable loss of blood. The child, enfeebled by successive hæmorrhages, fell into a state of severe collapse, his temperature being below 95 deg. His state was so critical that M. Verneuil was asked by his pupils to perform transfusion. Not being a great upholder of this operation, however, he determined to try hypodermic injections of ether, fifteen drops at a time. Several injections having been made in the course of the day, the temperature was seen to rise rapidly; and the following days, the same treatment being continued, the temperature promptly returned to the normal. The patient recovered. Another case was one of strangulated hernia. The temperature had fallen to about 95 deg.; and, in order that the operation might not be performed under such unfavourable conditions, M. Verneuil advised subcutaneous injections of ether in a similar manner. Under its influence, the temperature the same day rose to 97 deg., and made the operation possible.

With regard to the method of using ether, and the dose, M. Verneuil advises the surgeon to go about it with the thermometer in one hand and the syringe in the other. He might commence, for instance, with fifteen drops, and repeat it in an hour, taking care to ascertain the temperature. If this be not sufficient, the injection may be made as many times as is necessary, the ether being apparently well borne.

**LIMOUSIN ON THE EMPLOYMENT OF CROTON-OIL.**—At the meeting of the Society of Practical

Medicine in Paris, Jan. 4, 1877, M. Limousin read a communication on a new method of using croton-oil. The object of the procedure is to avoid the diffusion of the croton-oil, which always takes place when it is applied in a liquid state, and consequently to better limit its action. To attain this result, the croton-oil is mixed with cocoa-butter and white wax, in the proportions of two parts of the oil and one of each of the other substances. In this manner points or suppositories are obtained which may be applied to the parts of the skin which it is desired to irritate. The principal advantage of this proceeding is to localise exactly the artificial inflammation produced by the croton-oil. M. Ladreit de Lacharrière had first used these points for the treatment of tinea at the deaf and dumb establishment. M. Lattier had also tried it at the St. Louis Hospital, and he appeared to have obtained good results with it in the treatment of tinea tonsurans.

**PHARMACEUTICAL PREPARATIONS OF CICUTINE.**—The following formulæ for the administration of cicutine appear in *Progrès Médical*, March 10, 1877, from Bouchardat's *Annuaire de Thérapeutique*. For hypodermic injection:  $\mathcal{R}$  hydrobromate of cicutine (crystallised),  $\frac{1}{2}$  gramme; alcohol,  $1\frac{1}{2}$  grammes; laurel water, 23 grammes. For administration by the stomach the remedy may be administered in syrup, granules, or solution, thus. Syrup:  $\mathcal{R}$  simple syrup, 999 grains; crystallised hydrobromate of cicutine, 1 grain. Granules:  $\mathcal{R}$  crystallised hydrobromate of cicutine, 2 grains; milk, sugar, and syrup sufficient for 1,000 granules. Solution:  $\mathcal{R}$  crystallised hydrobromate of cicutine, 0.3 grs.; mint-water, 50 grs.; distilled water, 250 grs. Hydrobromate of cicutine has no disagreeable taste, and children take it easily.

**GALLARD ON IODOFORM PENCILS.**—In the case of superficial ulcerations, M. Gallard, physician to La Pitié (*Paris Médical*, Feb. 15, 1877), introduces a pencil of iodoform into the cervix, and maintains it there by a plug of wadding. To prepare these pencils, powdered iodoform is made into a paste by means of mucilage. Cylinders are made four centimetres (about one inch) in length, each containing one gramme ( $15\frac{1}{2}$  grains) of iodoform; they are dried in the air, and preserved in a bottle kept from the light. W. DOUGLAS HEMMING.

**THAON ON LOCAL ANÆSTHESIA BY BROMHYDRATE OF QUININE.**—Dr. Thaon (*Nice Médicale*, January 1877) has observed a case of intermittent fever which resisted the administration of bromhydrate of quinine administered internally, or by the hypodermic method. Eighty centigrammes, and even one gramme, was given in this way for several days without destroying the fever; but one of the punctures made on the forearm towards the external border, at four finger-breadths below the elbow, and probably at the level of one of the anterior branches of the musculo-cutaneous nerve, produced complete anæsthesia of the skin over a spot nearly five inches long by two-and-a-half inches in breadth. The loss of perception of heat was somewhat more extensive. One month after the puncture, this anæsthesia remained almost as considerable as at the commencement. M. Thaon thinks that some application may be made of this fact to the treatment of neuralgia.

**GRASSET ON THE EFFECTS OF CUTANEOUS FARADISATION IN HEMIANÆSTHESIA.**—M. Grasset



found (*Archives de Physiologie*, December 1876) in confirmation of the observation already made by M. Vulpian (*Archives*, No. 6, 1875), that local faradisation produced temporary return of sensibility, and even hyperalgesia, of the affected side in hemianæsthesia. This return of sensation was complete; sight and taste, which were also destroyed, were brought back. The electric excitation of any part of the skin seemed to have the same effect.

**ROUSSELET ON PODOPHYLLIN IN THE TREATMENT OF HABITUAL CONSTIPATION.**—Dr. Rousselet, in the *Gazette des Hôpitaux*, states that this treatment was at first unsuccessful in his hands, which he attributes to the bad preparation of the drug; for afterwards, by using only the pills sold in the druggists' shops under the name of podophyllin pills, he was invariably successful. He believes, however, that the method of administration had the greatest part in the successful result of forty-seven cases recorded by him. He lays special stress on the duration of the treatment, which is generally too brief. He reckons that from two to three months, according to the duration of the constipation, are required to ensure regular and permanent habits; and it is necessary to assist the formation of these habits by soliciting action of the bowels every day at the same hour. He begins with a daily pill containing one-fifth of a grain, increasing the dose by one pill, if necessary, until the desired effect is produced, and then continues the dose for a fortnight. He then only prescribes the dose every two days; the next week every three days; and so on, increasing the intervals by a day each week. He prefers that the medicine should not be taken in the usual way, at bedtime, but at the last meal, with the soup. He also recommends that action of the bowels should not be solicited till after breakfast, as the best means of establishing and keeping up the habit.

**RIVIÈRE ON THE USE OF PODOPHYLLIN IN HÆMORRHOIDS.**—Dr. Rivière, in the *Gazette des Hôpitaux*, December 16, states that he has had fifteen cases which were most conclusive as to the value of podophyllin in hæmorrhoids. Amongst the constipated patients, for whom he prescribed podophyllin, many suffered from hæmorrhoids, which he attributed to permanent constipation; this is to say, to the congestion which was its natural consequence. Subject himself to hæmorrhoids, though not habitually constipated, Dr. Rivière tried the podophyllin on himself, and found immediate relief. The hæmorrhoids again made their appearance, but were removed by the same means. He has since frequently employed the same method of treatment, and always with equal success, giving one or two podophyllin pills of one-fifth of a grain each, so as merely to soften the fecal mass. Encouraged by this success, Dr. Rivière tried podophyllin for chronic hæmorrhoids likely to necessitate operation. In these cases also he obtained immediate relief, and a cessation of all the usual distressing symptoms of this affection. The only drawback was the necessity for the daily administration of podophyllin. In some instances, however, the patients were able to leave off the use of the medicine for a long time. Some even were entirely cured.

**JANSEN ON THE TREATMENT OF PSORIASIS BY APPLICATIONS OF ACETIC ACID.**—Dr. Jansen, a Belgian army surgeon, has tried on an artilleryman suffering from psoriasis, the method of treatment re-

commended by Dr. Buck, of the Lubeck hospital (*Archives Méd. Belges*, Decembre, 1876). The method is as follows. After having given a warm bath to soften the patches, the scales are removed by a small stiff brush. The acetic acid is then applied over the affected parts by means of a sponge or paint-brush. The parts will then soon be seen to become pale, then injected, and slightly puffed up. The patient then complains of a smarting sensation, which generally lasts about half an hour. The crusts come away. At certain points they do not reappear after the fifth or sixth application; at others they are reproduced during a longer or shorter period, but they are thinner every time. Dr. Jansen finds it advisable to make one application only in twenty-four hours; and when the injection is persistent, he waits two or three days before renewing the painting. When, however, the patient is robust, and does not fear pain, it may be advantageous to keep up a certain amount of inflammation. This is sometimes accompanied by a slight hæmorrhage, but often brings on a dissolution of the patches by suppuration. Dr. Buck uses fomentations of Goulard water whenever the symptoms of inflammatory irritation are at all strong. Applications of acetic acid on the healthy parts scarcely produce any effect. Careful watching of this treatment is of the greatest importance. If the applications be made in an unseasonable manner, very serious consequences may ensue.

**LALOY ON THE TREATMENT OF PSORIASIS BY JABORANDI.**—Dr. Laloy, in his *Thèse de Paris* (21 Decembre 1876), gives an account of the experiments made by Dr. Lallier at the St. Louis Hospital on the treatment of psoriasis by jaborandi. These experiments included four cases of psoriasis in which jaborandi, whilst producing its usual physiological effects, did not induce any improvement in the cutaneous affection; the appearance of the eruption was modified, but without any tendency to cure.

**DELON ON THE TREATMENT OF ANTHRAX BY CAUTERISATION.**—Dr. Delon has seen in Dr. Desprès's wards at the Cochin Hospital (*Thèse de Paris*, 24 Dec. 1876) four cases of anthrax treated and cured by cauterisation. To these cases Dr. Delon adds another, which was under the care of the late Professor Dolbeau, in which excision and the actual cautery were employed. M. Desprès pursued the following method. He used as the destructive agent chloride of zinc, in the form of caustic amadou—amadour steeped in a solution of eighteen parts of chloride of zinc to fifteen of water. He commenced by making a crucial incision down to the bottom of the slough. He then separated the lips of the incision, and stuffed the bottom of the wound with small pellets of caustic amadou. If the slough were too deep to allow the caustic to be easily carried to the bottom, he cut out the four fragments, which allowed him greater facility of action. The caustic was allowed to remain twenty-four hours, covered with a poultice to subdue the inflammation. It was then taken away to allow the permanent application of emollients, if the cauterisation seemed to be effectual; if not, a fresh cauterisation must be performed.

M. Delon has also observed that in anthrax the temperature rises in proportion as the affection develops itself, and falls when the disorder is arrested.

**CHAVANIS ON THE TREATMENT OF CARBUNCLE.**—

M. Chavanis (*Lyon Médical*, 31 Dec. 1876), in reference to a case of anthrax, in which he employed excision and cauterisation with the chloride of zinc paste, and subcutaneous injections of carbolic acid, and salicylic acid internally, notes that on the whole carbolic acid does not seem to him to fulfil all its theoretical promise. Three cases of Raimbert's, one of Cezarl's, and his one, are favourable to the use of antiseptics; but it is not on so small a number of cases, in which the cure may be due to cauterisation as much as to antiseptics, that a new treatment can be based. Cauterisation is necessary; carbolic acid may also be employed as an adjuvant, in subcutaneous injections, compresses on the œdema, and also internally, without the pretension of being a specific against anthrax. In all respects iodine seems preferable.

#### RECENT PAPERS.

- The Action of Muriate of Pilocarpin. By Dr. C. Scotti. (*Berliner Klinische Wochenschrift*, March 12.)  
 The Treatment of Inflamed Tissues. By Dr. W. Thurn. (*Berliner Klinische Wochenschrift*, March 5 and 12.)  
 The Treatment of Sciatica by prolonged Sand-Baths. By Dr. Flemming. (*Berliner Klinische Wochenschrift*, March 12.)  
 The Therapeutic Action of Salicin. By Dr. H. Senator. (*Ibid.*, April 2 and 9.)  
 The Arrest of Epileptic Attacks by Subcutaneous Injection of Apomorphia. By Dr. E. Vallender. (*Ibid.*, April 2.)  
 On the Preparation of Bichloride of Mercury for Subcutaneous Injections. By Dr. Gschirhagl. (*Wiener Medizin. Wochenschrift*, March 10, 24, 31, April 7.)  
 The Importance of Electrotherapeutic Galvanisation of the Sympathetic Nerve. By Dr. B. Schulz. (*Ibid.*, March 17.)  
 On the so-called Antagonism between Atropia and Morphia. By Dr. Binz. (*Deutsche Medizin. Wochenschrift*, March 24.)  
 A Remedy for Headache. By Dr. J. E. Lockridge. (*American Practitioner*, March.)  
 The Seton in Paralysis and Epilepsy. By Dr. T. J. Griffiths. (*Ibid.*)

#### OBSTETRICS AND GYNÆCOLOGY.

DUNCAN ON THE FŒTAL HEAD.—In the *Edinburgh Medical Journal* of February, Dr. Matthews Duncan contributes a communication "On some of the Relations of the Fœtal Head to Rupture of the Perinæum and Injuries of the External Genital Organs." He contends that "in the passage through the brim the head has to suffer and be moulded, while the resisting parts are, practically, unyielding, and may be regarded as unaffected. In the passage through the vaginal and vulvar orifices the head has to suffer to some extent, and be moulded slightly, but the resisting parts are much more moulded, and must yield or be lacerated." He shows in a good woodcut from Smellie that the sub-occipito-frontal diameter, being the largest, is that most concerned in the production of the mischief: that the posterior vaginal wall may be lacerated by a shorter diameter, and the laceration extended by the passage of the larger diameter; or, the actual orifice being more distensible than the vagina, the vulva may escape laceration. He then proceeds to discuss the deformity of the head, viz., its flattening in the sub-occipito-bregmatic diameter, as resulting from the compression at the vulvar orifice, sustaining his position by the fact that such deformity is more often seen in the heads of male infants, which are larger than those of females; and more often in primiparæ, where the top parts are tougher than in multiparæ.

With regard to the latter portion of the paper, treating of compression of the fœtal head, it seems that sufficient stress has not been laid on the lesser dilatability of the os uteri in primiparæ, whereby the

head is subjected to greater pressure than in multiparæ, resulting in a larger caput succedaneum. In primiparæ, this is seen in the fact that the uterus comes down lower in the pelvis before the os opens sufficiently to allow the head to pass out of it, during which time the *vis a tergo* is producing an elongation of the head before it engages in the lower portion of the parturient canal.

While due regard must be had to the rigidity of the vulvar orifice, the rapidity of the labour is a factor that must not be lost sight of; for, when time is given, the parts may become sufficiently distended, and allow the head to pass without laceration. This condition may be to a certain extent artificially produced by the practitioner holding back the head somewhat, and so preventing its too sudden extension. Then, too, it should be borne in mind that, before extension of the head takes place, and the rotation under the pubic arch begins, the head is forced backwards and downwards against the posterior vaginal wall, causing considerable protrusion of the anus; thus the chief force is brought to bear rather suddenly on the less distensible posterior wall of the vagina, causing some superficial laceration, which, as the head advances, may either be prolonged forwards to the posterior fourchette, or, ceasing where it commenced, the head may advance, distending the perinæum, and a sudden pain may rupture its edge, leaving an unlacerated bridge of tissue. It is of the greatest importance that this stage of labour should be so conducted as to equalise the pressure on the soft parts, and, by aiding to a uniform advance of the head, lessen the chance of perineal rupture.

HEYWOOD SMITH, M.D.

GALLI ON A CASE OF ABDOMINAL PREGNANCY: LONG RETENTION OF A LITHOPÆDION.—Dr. Galli, of Piacenza, relates in *Il Morgagni* for September and October, 1876, an interesting case of extra-uterine pregnancy, and gives the following summary.

A woman, named Maria Bonvini, was first delivered of an acephalous fœtus at six months. She then had, two years later, a normal pregnancy and labour. At the age of 30, she again became pregnant; but, at the end of eight-and-a-half months, there was a cessation of the fœtal movements, which had been manifested very early, and had been more active than usual. After the death of the fœtus, she had general *malaise*, and for some time there was a repetition of febrile attacks, preceded by rigors; these arose from the absorption of the fluid contents of the fœtal cyst. After the cessation of these attacks, menstruation returned; the woman gradually regained her ordinary good health, and some years afterwards was safely delivered of a healthy child. During the last years of her life, she suffered at various times from gastro-enteric catarrh, and from colic, referable, perhaps, to the extra-uterine fœtus. The abdomen always remained somewhat enlarged; the fœtus became gradually infiltrated with lime-salts, being thus transformed into a true lithopædion, which was retained during thirty-seven years without causing any grave disturbance. At last, it was the accidental cause of the woman's death. In a fall, she received a very severe blow on the region where the fœtus was; this was followed by gangrenous entero-peritonitis, which was fatal in two days.

A. HENRY, M.D.

EASLEY ON SUCCESSFUL REMOVAL OF AN EXTRA-UTERINE FŒTUS.—Dr. E. T. Easley, of Little Rock, Arkansas, relates a case of this kind in



the *American Practitioner* for September. The patient, Frances T—, aged 34, married, and the mother of three living children, had been twenty-four months pregnant. The child lay across the front of the abdomen, with the head in the right iliac fossa, and the back to the pubic symphysis. An incision was made in the line of the linea alba, extending from an inch above the umbilicus to within an inch of the pubes. The cyst—dense, fibrous, and tough—was not adherent in front, but had contracted extensive adhesions below. The child, of good size and well preserved, was adherent intimately at all points to the cyst. The liquor amnii was absorbed; the placenta was nearly atrophied; the cord a mere string. The child was broken up and extracted piece by piece; and the cyst-cavity was sponged out and cleansed with a chlorinated wash. The edges of the cyst were stitched to the abdominal wound by a fine uninterrupted suture, and the whole closed by deep interrupted sutures made to include the cyst-walls. Free drainage was kept up from the lower end of the wound, and the cyst-cavity constantly cleansed with antiseptic solutions, until it gradually became obliterated by suppurative and granulation. All exudation, hæmorrhage, or fluids, were excluded from the peritoneal cavity.

The operation was undertaken on account of the exhaustion and irritation of rapidly recurring attacks of pelvic and abdominal pain, and at the urgent desire of the patient and her friends. Recovery was complete.

SINÉTY ON THE HISTOLOGY OF THE UTERINE CAVITY AFTER PARTURICTION.—Dr. Sinéty (*Archives de Physiologie*, Aug.) details the results of the microscopic examination of the uterine mucous membrane of a woman who died twenty-two hours after delivery, and that of the unimpregnated side of a double uterus, one-half of which contained a mature fœtus. He comes to the following conclusion. 1. The different parts of the decidua known as reflexa, vera, and serotina, all have the same origin, and are composed of the same anatomical elements. 2. Up to the end of gestation, at some points of the uterine cavity, parts of the glands are found to be paved with their cylindrical epithelium, but after parturition epithelium can no longer be found, its place being occupied by embryonic cells, which infiltrate all the tissue; and it appears probable that the new epithelium is formed at the expense of these cells. 3. The dehiscence of the placenta cannot be attributed to the fatty degeneration of the cells in a part of the decidua; for the amount of fatty degeneration is too limited, and does not attain a maximum at the deeper part of the decidua where the dehiscence takes place.

MACDONALD ON PUERPERAL ECLAMPSIA: FACTORS IN ITS PRODUCTION.—Dr. A. Macdonald (*London Obstetrical Journal*, August, 1876) gives these factors as follows.

1. *Predisposing*. Special weakness in the nervous system, either congenital or acquired by depressing circumstances, and possibly also aggravated by impaired nutritive cerebral changes through an imperfectly depurated blood arising from diseased kidneys.

2. *Efficient*. In addition to the above, anæmia of the cerebral motor centres, induced in the manner in which Traube and Rosenstein explain its production, which is under conditions most favourable for its causation, if it do not take place only then when the blood is increased in bulk, and rendered hydræ-

mic by the co-existence of kidney disease in some of its forms.

3. *Exceptional*. But in certain cases where no kidney disease is present, it is difficult to see how the mechanical conditions required by the above theory can be obtained; and these are naturally explained by the theory of reflex spasm of the cerebral arteries, induced by irritation travelling from the uterus centripetally to the great motor centres of the brain in the manner in which Cohen explains the origin of his eclampsia uteri matura. In this case, also, we need to predicate the existence of specially predisposing causes affecting injuriously the nervous system of the mother.

KÖENING ON MAMMARY LYMPHANGITIS OF NEWLY DELIVERED WOMEN.—Dr. Köening (*Thèse de Paris*, 1876) considers that the first important indication is to avoid fissure of the breast: but if the lymphangitis be declared, it is then necessary, he says, leaving aside local bleedings and depleating measures, to have recourse without delay to compression. Compression he thinks an infallible means, which has succeeded in all the cases in which he has seen it employed.

The best proceeding is the following: The diseased breast is covered with a layer of cotton-wool, and a bandage is applied which is known in minor surgery as the bandage of Mayor, or the triangular bonnet of the breast. The form of the bandage is a triangle, a yard in length from one extremity to the other, and fifty centimetres (nearly twenty inches) from the apex to the base. The base of the triangle is placed obliquely under the diseased breast, then one of its extremities is directed under the corresponding armpit, and the other over the opposite shoulder, and there united behind the shoulder blade. The apex of the triangle is then lifted in front of the diseased breast, it is carried over the corresponding shoulder, and firmly fixed behind.

Sometimes a linseed poultice is at the same time applied on the inflamed part.

The effects of treatment thus arranged are almost marvellous, the pain is immediately calmed; the inflammatory redness and the œdema are diminished at the end of a very short time.

#### RECENT PAPERS.

- Observations on the Injection of Hot Water in Uterine Hæmorrhage. By Dr. Max Runge. (*Berliner Klinische Wochenschrift*, March 26.)  
On Extra-abdominal Turning. By Dr. L. Ellinger. (*Wiener Medizinische Wochenschrift*, March 3.)  
On Accessory Ovaries. By Dr. H. Beigel. (*Ibid.*, March 24.)  
The Surgical Treatment of the Pedicle after Ovariectomy; and on Ovariectomy in one act. By Dr. B. Stilling. (*Deutsche Medizin. Wochenschrift*, March 17, 24, 31.)  
Shoulder and other more Transverse Presentations. By Dr. G. R. Maxson. (*American Practitioner*, March.)  
On Spondylizema as a newly discovered cause of Pelvic Alteration. By Dr. Herrgott. (*Annales de Gynécologie*, March 1877.)  
On Suckling. By M. Archambault. (*Le Progrès Médical*, March, 17.)  
On Double Parasitic Heterotopian Monsters. By Dr. Gross. (*Revue Médical de l'Est*, March 15.)

#### OPHTHALMOLOGY AND OTOLOGY.

LOWNE ON SOME PHENOMENA CONNECTED WITH VISION.—Mr. B. Thompson Lowne has lately published the results of some careful experiments bearing on, 1. The physiological effect of ruled surfaces; 2. The time required to produce or obliterate

a retinal image; 3. The relation of the foregoing observations to Fechner's Law.

Respecting the physiological effect of ruled surfaces, Mr. Lowne, being of opinion that an investigation of the relation of the shades produced by ruled surfaces, as in engravings, with those of variations in the intensity of illumination in shadows, would illustrate the physiological action of light upon the retina, examined a number of wood-cuts and engravings, and found that there are usually about nine different shades, exhibiting a regular series from white to black, and assumed that, the nature and intensity of the illumination being constant, the intensity of the sensations produced by a given surface is directly as the number of the retinal elements stimulated.

With the view of determining the effect of variations in the intensity of the stimulus, Mr. Lowne repeated Lambert's experiment, adding a wood-cut in which he had previously determined the ratio of white and black, and found that the apparent illumination, measured by a reference to a ruled surface, varied inversely as the distance of the source of light. In support it was deemed necessary to prove that a distinct picture of the lines falls upon the retina, and that, when a perfect picture is not obtained, the surface appears fainter in shade. This was accomplished by regarding a ruled surface slightly out of focus, or with an astigmatic eye, when a proportionate lightness of tone was manifest. This is illustrated by a carefully ruled diagram.

In examining the time required to produce or obliterate an image in the retina, Mr. Lowne, doubting the results arrived at by M. Delbœuf, since in his experiments with revolving discs the rate of rotation was neglected, repeated the experiments, using a disc six inches in diameter kept in rapid rotation by clockwork.

He concludes that with a dull light a white streak on a black surface must occupy the same position for about 1-5000th of a second to be seen at all; but the time varies inversely as the square root of the illumination. A black spot upon a white ground must rotate much more slowly to be seen, in consequence of the faintness of the after image.

LLOYD OWEN.

MASON ON A CASE OF CYST IN THE ANTERIOR CHAMBER.—Mr. Frederick Mason, of Bath, reports this case in the *Royal London Ophthalmic Hospital Reports*, vol. ix, part i. The patient, aged seventy-one, began to lose sight in the affected eye twenty years ago, and was said by various surgeons to be suffering from cataract. When he was first seen by Mr. Mason, there were two particles of a white substance apparently adherent to the corneal surface. On further examination, these were found to be in close contact with the inner surface of the cornea, or, rather, to be in a cyst which filled the lower part of the anterior chamber. The cyst was loose in the chamber, semi-transparent, and filled with clear fluid. The pupillary space was clear; there was some ciliary redness at the lower part. The cyst was removed by an incision through the cornea, and a portion of unhealthy-looking iris, against which it had rested, excised.

The cyst was examined by Mr. Nettleship, who considered it to be "the ruptured lens-capsule somewhat contracted and thickened, containing some small remnants of calcified lens, and having attached to it some shreds or membranes of vitreous body, in a state of chronic inflammation." There was no recovery of vision.

MORTON ON TWO CASES OF AIR-BUBBLES IN THE VITREOUS BODY, FOLLOWING PERFORATING WOUNDS.—Mr. A. Stanford Morton records, in the *Royal London Ophthalmic Hospital Reports*, vol. ix, part i, two cases which are worthy of notice as interpreting a condition which might readily be the source of an erroneous diagnosis. In each case there had been a wound of the sclerotic by a chip of metal; and, upon examining the fundus with the ophthalmoscope, to determine the presence or absence of the piece of metal, a body, presenting a peculiar metallic lustre, could be seen. This was, at first, taken to be the foreign body sought, but a closer examination showed that it was, in reality, a bubble of air carried into the vitreous body by the chip of metal. It was about as large as the optic disk flattened, bright at the centre, and bounded by an uniform dark zone.

In twenty-four hours after the injury these bubbles of air had almost gone, and in thirty-six had entirely disappeared.

KLEIN ON MALFORMATION OF THE EYES.—In Dr. Zehender's *Monatsblätter* for January, Dr. S. Klein describes at great length a rare case of malformation of the eyes. Every trace of iris and ciliary processes was absent in both eyes, which also exhibited displacement of the lens upwards. The lower portion of the lens corresponded with the axis of the eyeball.

The subject of these malformations was a girl aged 20. The eyeballs were affected with considerable nystagmus, were very prominent, the upper portions of the cornea being covered by the lids which drooped. The disc exhibited a glaucomatous cup, and the refraction of the eye, examined by the ophthalmoscope through that part in which the lens was wanting, shewed  $\frac{3}{2}$  of myopia. When a child, this patient was able to read ordinary print, and learned to read; at the time when Dr. Klein saw her, her vision was only  $\frac{1}{200}$  in the right eye, and  $\frac{1}{300}$  with the left. Glasses only improved vision by enabling the object to be brought closer to the eye. Dr. Klein quotes several cases of malformation in confirmation of his view that all these abnormalities, including the glaucomatous cup, are congenital accompaniments of coloboma and aniridia.

MEYHOEFER ON INJURY OF THE EYE.—In Zehender's *Monatsblätter* for February, Dr. H. Meyhoefer records four cases of injury to the eyeball; viz., a case in which the sphincter of the pupil was torn in four places by a blow; a case of penetrating wound in the ciliary region, with prolapse of the iris and part of the vitreous body; treated by suture, which terminated favourably, and three months after the patient was able to read  $\frac{1}{4}$  and Jaeger 4 with the injured eye; a case of meningitis after excision of an injured eyeball which had not suppurated, terminating favourably; and a case of iridocyclitis occurring 24 years after the impaction of a minute fragment of a gun-cap between the ciliary muscle and sclerotic, with sympathetic symptoms in the sound eye, which vanished a few days after excision.

B. THOMPSON LOWNE.

#### RECENT PAPERS.

- Migrating or Sympathetic Neuritis after Enucleation. By Dr. Colmann. (*Berliner Klinische Wochenschrift*, March 19.)  
 A Criticism of the Various Methods of determining Latent Hypermetropia. By Dr. E. Nagy de Regéczy. (*Wiener Medizinische Wochenschrift*, March 10, 17, 24.)  
 Treatment of Ciliary Blepharitis. By Armand Chevallereau. (*La France Médicale*, March 14.)



Serous Cyst of the Orbit; Puncture and repeated Cauterisation of the Sac—Cure. By Dr. Brière. (*L'Année Médicale*, February 1877.)  
 Singular Etiology of a Case of Purulent Ophthalmia. By Dr. Brière. (*Ibid.*)

## DERMATOLOGY.

HEBRA ON PITYRIASIS RUBRA UNIVERSALIS.—Dr. Hebra, junior, describes in the *Archiv für Dermatologie und Syphilis*, 1876, 4 Heft, the case of a man, 38 years old, suffering from the above disease, who was admitted into Hebra's clinique, in July 1872. When eight years old he had had variola, and from that time the skin was never quite normal, becoming unusually red under the influence of warmth, and blue when exposed to cold. He was apprenticed at fifteen, and the colour of his skin was then a subject of remark amongst his fellow workmen. The abnormal appearance of the skin gradually increased, and two years before admission to the hospital he became unable to work, tension of the skin preventing free movement of the extremities. Some months previously, he had observed scales on the legs, and in eight months they existed over the whole surface. Six months later, the hair of the head, beard, and finally of the pubes, fell out. On his admission, he presented all the appearances described in Hebra's work, with the addition, that in some parts the skin was fissured. He was three-and-a-half years under treatment, and died in the hospital. During this time, the only change that took place in the aspect of the skin was that, instead of the original bright red colour, the tint became a dark brown red, and on pressure with the finger, the colour did not completely disappear.

In March 1874, he had an attack of pneumonia. Whilst the attack lasted, the redness and scaling diminished; but they reappeared as he recovered. He had another attack of pneumonia in July 1875, which left tubercular infiltration behind it, and he died of tubercular disease of the lungs and intestine in July 1875. The treatment employed had no influence on the course of the disease. The different external remedies tried were, applications of cod-liver oil, water-baths during the whole day (the patient returning to his bed at night), an India-rubber suit of clothing, and precipitate and diachylon ointments. These were continued separately, over periods exceeding one hundred days each. Benzin was tried, but, after three weeks, had to be discontinued, on account of the discomfort it produced.

He had two courses of arsenic. Pills were given containing one-tenth of a grain of arsenious acid each; at first three daily, then increased weekly until he took twelve daily, and again diminished to three daily. Each course was continued until he had taken 2,000 pills (200 grains of arsenic), there being an interval of two years between the courses. He thus took in all 400 grains of arsenic. No constitutional disturbance was produced by the metal.

The microscopic examination of the skin after death showed absence of the papillary layer and sweat-glands, few traces of the sebaceous glands, and a considerable quantity of pigment-granules.

A second case is that of a man, aged 53. A year before admission he was affected with redness and scaldiness of the skin, attended with itching, the disease rapidly extending over the whole surface. When admitted, he was suffering from tuberculosis, and he died of this disease within the first month of treatment. All the organs of the skin were normal.

There was a large amount of cell-infiltration, similar to that found in other skin-affections.

In a third case the outbreak of the disease was observed. A woman, 64 years old, was admitted on account of impetiginous eczema of the scalp. One day she complained of feeling ill and sleepless, the temperature being found abnormally high. After two days the whole skin became a deep red, the fever and loss of appetite continuing. Within a week the diagnosis was made. The slight swelling that accompanied the outbreak of the disease diminished, but the desquamation of epidermic scales which adhered to the surface continued. She remained two months under observation, and then left the hospital.

AUSPITZ ON THE MECHANICAL TREATMENT OF SKIN-DISEASES.—Professor Auspitz (*Archiv für Dermatologie und Syphilis*, 1876, 4 Heft) finds the use of India-rubber clothing advantageous in skin-diseases attended with dryness and itching, and testifies to the production of eczema by the too frequent use of baths. In infiltrated eczema of the ears, forehead, neck, extremities, and especially of the soles and palms, he has seen good results from rubbing with a soap containing sand, or with pumice-stone. The same treatment is sometimes used with advantage in prurigo. For lupus, he finds excision or circumcision of the skin the best treatment, when it can be efficiently carried out. Lupus-tubercles he stabs with a sharp instrument dipped in a solution of iodine in glycerine.

Lupus erythematosus he believes to be a cell-infiltration from the capillary vessels, and not a process specially connected with the sebaceous glands. The central depression does not always exist, and when it does exist it does not always correspond to a follicle. The treatment he has found of most advantage is to remove the crusts with oil or soap, scrape out the infiltrated parts with Volkmann's scoop, and cut the vessels of the erythematous parts with lancets. When the disease is on the extremities, he macerates by an India-rubber covering. For flat epithelioma (rodent ulcer of older writers), he scrapes out the diseased tissue with a sharp scoop, repeats the operation after two days, and then applies an arsenical paste.

KÖBNER ON THE ETIOLOGY OF PSORIASIS.—Professor Köbner (*Archiv für Dermatologie und Syphilis*, 1876, 4 Heft) vindicates against Dr. Wutzdorff his priority in regard to the doctrine that local manifestations of psoriasis depend on irritation of the skin from outward causes, a certain constitutional predisposition in the patient being presupposed. He has found that, in the squamous syphilide, new eruptions cannot be produced artificially.

KINNICUTT ON A CASE OF ZOSTER FRONTALIS TRAUMATICUS.—Dr. Kinnicutt (*Archives of Dermatology*, Jan. 1877) relates the following case. A boy, aged 13, was struck by a hard ball directly above the left eye. On the seventh day following the accident, he complained of sharp shooting intermittent pain in the course of the distribution of the frontal branch of the left ophthalmic nerve, and strictly limited to this region. This was followed in three days by patches of redness similarly limited, which were succeeded by groups of flattened vesicles confined to the region supplied by the nerve. He was first seen after the appearance of the herpetic eruption, and there was then no scar or other mark at the seat of injury.

TAYLOR ON A CASE OF PELIOSIS RHEUMATICA.—Dr. Taylor relates the following case (*American Practitioner*, Dec. 1876). A delicate woman, 48 years old, had an attack of herpes zoster, the girdle passing from the middle of the spine to the groin. It ran a usual course, terminating in two weeks; but severe pain remained for three or four weeks longer. The pain then became less, but began to show itself in the course of the sciatic and posterior tibial nerves. After three or four days the foot and ankle swelled, and the next morning there were purpuric spots on the foot and leg, with lessening of the pain and swelling. The pain now entirely left the region of the zona, and from that time was localised in the leg and foot. The spots faded in eight days, but after two weeks there was another attack. A succession of attacks and periods of intermission followed, until, after seven months from the first appearance of the herpes, the woman became again quite well. Shortly before permanent improvement took place, there was swelling of the joints of one hand. There was also a systolic murmur at the apex of the heart. G. THIN, M.D.

#### RECENT PAPERS.

Application of Scraping to the Treatment of some Cutaneous Disorders. By M. A. Dron. (*Lyon Medical*, January 28)  
 Treatment of Impetigo. By Dr. Ory. (*La France Médicale*, January 31.)  
 On Porrigo Decalvans. By M. Lailler. (*Le Progrès Médical*, February 10.)  
 Pemphigus Foliaceus. By Dr. S. Sherwell. (*Archives of Dermatology*, January 1877.)  
 Two Cases of Morphea. By Dr. Bulkley. (*Ibid.*)  
 Clinical Lectures on Lepra (Elephantiasis Græcorum). By Dr. Neumann. (*Allgemeine Wiener Medizin. Zeitung*, Feb. and March.)  
 On Alopecia. By M. Lailler. (*Le Progrès Médical*, March 17.)  
 On Scleroderma. By M. Hardy. (*Gazette des Hôpitaux*, March 8.)  
 A Case of Scleroderma Adultorum. By Dr. Haller. (*Berliner Klinische Wochenschrift*, April 2.)  
 A Case of Pemphigus Foliaceus. By Dr. Zeissl. (*Wiener Medizinische Wochenschrift*, March 10 and 17.)

#### REPORTS OF FOREIGN SOCIETIES.

##### IMPERIAL ROYAL MEDICAL SOCIETY OF VIENNA.

January 26, 1877. *Surgical Uses of Chloride of Zinc*.—Dr. von Dumreicher brought before the meeting a woman from whom he had removed a gelatinous cancer of the breast, along with infiltrated axillary glands. The wound was dressed with an eight per cent. solution of chloride of zinc, and covered with cotton-wadding. Healing by the first intention took place in a few days. He also showed a man, aged 62, who a year and a half since had suffered from a hydrocele as large as a child's head. Dr. von Dumreicher tapped it and injected lukewarm water, and then an eight per cent. solution of chloride of zinc, which he allowed to remain a short time. He then again washed the cavity with lukewarm water, and inserted a drainage-tube; a compress with cotton-wool and adhesive plaster were also applied. There was no further collection of fluid.

*Removal of Eyes during Religious Mania*.—Dr. Leidesdorf exhibited a man who had torn out both his eyes in a paroxysm of religious mania. When found, he had entirely removed one eye without the aid of instruments; the other was attached only by the external rectus muscle. Beyond considerable œdema of the lids and slight hæmorrhage, no disturbance was produced. Dr. Bergmann had also reported a similar case in a woman who removed

both eyes. In both cases, the motive was the strict fulfilment of the precept, "If thine eye offend thee", etc. After his removal to the asylum at Trieste, the patient had to be carefully watched, as he attempted to tear away his penis and testes. On the other hand, his former insane ideas had disappeared. Dr. Leidesdorf remarked that the great lowering of sensibility during high maniacal excitement explained how the insane could perform such operations on themselves. He referred to a case of self-crucifixion in Venice as an instance in point.

*Rupture of the Liver*.—Dr. Klob made some remarks on the causes and consequences of this lesion, expressing his dissent from the opinion held by many, that recovery cannot occur. He described a case that had recently come under his notice, in which complete healing would certainly have occurred if the patient had not succumbed to the effects of other injuries. The case was that of a man, aged 42, who fell from a corn-waggon, the wheel of which passed over his body, producing a contused wound near the right crista ili, fracture of several ribs, considerable emphysema of the skin on the right side, and rupture of the liver. The injury of the liver was indicated during life by the occurrence of icterus and peritonitis; but the patient appeared to be doing well, when, at the end of ten days, pyæmia set in, and he died. On *post mortem* examination, there was found a laceration of the right lobe of the liver, six or eight centimetres (about two and a half or three inches) deep, with several smaller clefts proceeding from it. All the lacerations were adherent by means of a mass consisting of old extravasated matter mixed with constituents of the bile, and containing no trace of pus. Dr. Klob was confident that the rupture would have healed if pyæmia had not intervened.

*Leukæmia*.—Having referred to the observations of Neumann, Waldeyer, Ponfick, etc., on the changes undergone by the marrow of the bones in leukæmia, Dr. Englisch said that he had examined the blood in cases of disease of the bones, in order to ascertain whether, when the spleen was not yet enlarged, there was an increase of the white corpuscles. In the great majority of the cases, the proportion of red and white corpuscles was normal; in two, however, there was a remarkable increase of the white corpuscles. The first case was one of otitis of the radius, with consecutive inflammation of the wrist-joint. The spleen was not enlarged. The proportion of red corpuscles to white was fifty to one, and there was great improvement under the use of iodide of potassium. The second case was one of acute osteomyelitis of both tibiæ, in a man aged 24, who had previously suffered from typhus, intermittent fever, and syphilis. There was infiltration of the lungs; and a slight systolic murmur was heard at the apex of the heart. There was no enlargement of the spleen or liver; the lymphatic glands were normal, except that there was slight swelling of the right inguinal gland. Incisions were made, and Lister's dressing was applied. The proportion of white corpuscles to red was one to three. A second incision having been made, the periosteum was found to be remarkably thickened, forming a succulent gelatinous mass; the bone was not exposed. The healing of the wound was proceeding favourably, when enlargement of the spleen was detected, the systolic murmur became more distinct, and two days later a diastolic murmur also was heard. The evening temperature was 104 degs. to 105 degs. Cerebral symptoms and paresis of the muscles set in, and the



patient died of meningitis. The necropsy revealed basilar meningitis, endocarditis, pericarditis, a ruptured aneurism of the bicuspid valve, enlargement of the spleen with abundant infiltration of lymphoid elements, and hyperæmia of the marrow of all the bones; but the white corpuscles were no longer in excess.

February 9. *Leukæmic Blood-Crystals*.—Dr. Heschl showed some so-called Charcot's crystals from a case of leukæmia. They were not found in the fresh blood, but were first observed three days after death. They had the form of rather elongated quadrangular pyramids, with their bases in apposition; and were found only in the blood-clots within the heart and in the marrow of one humerus. They are often found in the blood in cases of leukæmia, and occasionally in the sputa of bronchial asthma; and, according to some, they produce the asthmatic paroxysms by irritating the bronchial mucous membrane. Their precise chemical character is undecided, but they are regarded as being most probably of albuminous nature.

*Bursal Tumours*.—Dr. von Dumreicher showed a man who had had a ganglion on the back of each hand, and a præpatellar hygroma on each leg. The tumours on the right hand and left leg were first laid open, and dressed with chlorine water. The operation was followed in both limbs by inflammation and suppuration, attended with high fever; healing did not take place until the end of three weeks. The ganglion on the left hand and the right præpatellar tumour were now laid open; the bleeding having been arrested, the edges of the incisions were united and washed with an eight per cent. solution of chloride of zinc; waxed paper was laid over the wound, and over this a compress of charpie secured by adhesive plaster. Healing took place in three days without suppuration or fever.

*The Treatment of Wounds*.—Dr. von Dumreicher read a paper on this subject. He referred first to the results obtained from the employment of the antiseptic system by Lister, Schultze, Nussbaum, Volkmann, Thiersch, and others, and to the statement made as to the value of this method. Burow advocated the open treatment of wounds, and statistics were in his favour, as he lost only nine, or seven per cent., of a hundred and twenty-three great amputations, while the average percentage of mortality in the cases of Lister, Volkmann, and Thiersch, was nineteen and one-third. In his own wards the open treatment, introduced into Austria by Kern in 1809, had been always followed; and during thirty years he had met with only two outbreaks of hospital gangrene, which soon ceased. Although he was well pleased with the results of this method, he had never believed that it was the best, as the wounds were left too much exposed to external noxious influences. Great importance must be attached to a good staff of nurses. The open method was better suited for small hospitals (Burow had only nineteen beds). Dr. von Dumreicher had adopted a plan which favoured healing by the first intention within a short time. The incisions were made in such a manner as to best favour the apposition of the edges of the wound. The bleeding vessels were tied with catgut, in order to avoid suppuration. To induce sufficient exudation for the firm union of the edges of the wound, these were washed with a solution of chloride of zinc (four to eight per cent.); and the wound was not closed until all bleeding had ceased. Drainage-tubes were used to remove secretions from cavities. In order to prevent the dressings from adhering,

tissue-paper dipped in wax was applied over the surface of the wound; and apposition was maintained by means of cotton-wool, jute, strips of adhesive plaster, etc. Dr. von Dumreicher had used this plan in twenty-four operations, viz., six cases of removal of the breast, two cases of lipoma, two of caries, three of incarcerated inguinal hernia, one of periostitis with necrosis, two of ganglion, three of hydrocele, one each of cold abscess and inflammation of the breast, and three of amputation. The result was astonishingly favourable. Two of the amputation cases died of pyæmia.

February 16. *The Dressing of Wounds*.—Dr. Seng showed a woman from whose axilla he had removed a sarcomatous tumour, dressing the wound according to Dumreicher's method. Healing by the first intention took place in forty-eight hours; but a portion of it had again separated.—Dr. Weinlechner showed several patients who had been treated by Lister's method. The first was a young man, who last year had a pulsating tumour of the size of a pea at the entrance of the external auditory meatus. It was diagnosed to be an aneurism. Some years previously, he had been under Dr. Gruber's care for catarrh of the tympanum. In the neighbourhood of the swelling were numerous enlarged and pulsating vessels. Last summer the aneurism burst. Dr. Weinlechner endeavoured, but without success, to restrain the hæmorrhage by tying and compressing the neighbouring vessels, and applying perchloride of iron to the aperture in the tumour. He then tied the common carotid artery. The patient was discharged cured at the end of eight days. Other cases related by him were: wound of a knee-joint in a young man; inflammation of the shoulder-joint in a man aged 63; and laceration of the arm and shoulder by machinery in a lad aged 17. He then made some remarks on Dr. von Dumreicher's paper, read at the previous meeting. He believed that the chloride of zinc acted only as a disinfectant, and this only when healing took place by the first intention. Otherwise, when healing took place by suppuration, it was not efficient, and was then not to be preferred to Lister's dressing. He thought also that Dr. von Dumreicher attached too much importance to the internal condition of the patients with regard to the origin of accidental traumatic diseases. Such diseases had been observed to attack perfectly healthy individuals; and this could only be attributed to the air being allowed access to the wound. Surgeons must endeavour to simplify, as much as possible, Lister's complicated process, so as to ensure its general adoption. It must be remembered, also, that the sanitary condition of Dr. Dumreicher's wards was specially good.—Dr. von Dumreicher, in reply, said that the injurious effect of air on wounds was not proved, and that the supposition was contrary to facts, such as the extremely successful result of the open treatment of wounds. On the other hand, the influence of the general condition of the individual, in the widest sense of the word, was of the greatest importance in regard to the course of the wound. For while, as every surgeon of experience must have observed, simple gastric disturbance produced a marked change in a suppurating wound, a much greater influence must be ascribed to individual constitution and to the conditions of innervation. In reference to Dr. Weinlechner's remark that his method succeeded only when the wound healed by the first intention, he said that this was not so; for, if union did not take place in this way, he removed the dressing, washed the granulating surfaces with a

five per cent. solution of chloride of zinc, and applied new dressing, with most favourable effect on the subsequent course of the wound. In conclusion, he said that he would in future employ Lister's method in cases in which, in consequence of dyscrasia, the progress of the wound could be modified by other plans, but a fatal termination could not be averted. In such cases, Lister's treatment was said to be capable of not only exerting a marked influence on the course of the wound but of averting death, except in cases of too great severity.

*The Double Sound and Double Murmur in the Femoral Artery.*—Dr. von Bamberger gave an histological account of this phenomena, and of the explanations suggested by Duroziez, Traube, Gerhardt, Landois, and himself. He then related the results of his own observations. In the first of ten cases of aortic insufficiency examined by him, a strong jerking impulse was perceived in the femoral artery. On auscultation, during the first moment, a sharp short sound and a slight murmur were heard; during the second moment, in most cases nothing was heard; on many occasions there was a mild blowing murmur; and occasionally a distinct sound was heard. In the last case, the rhythmic order was as follows: first, a distinct sound accompanied with a murmur; a short pause; then the second and weaker sound; and then another pause, followed by the first sound. Examination of the femoral pulse by Marey's and Sommerbrodt's sphygmographs showed a steep ascending line, and in the middle of the descending line a sudden interruption followed by an elevation, so that a large arch was formed when the line reached the base. As the secondary rise in the descending part of the curve was synchronous with the second sound heard in the artery, they probably were both due to the same cause. In order to determine this, a Marey's sphygmograph was placed over one femoral artery, while the stethoscope was applied over the other femoral, its ear-plate being connected to the body of the instrument by an elastic tube, so that the movements of the head might not be interfered with. In this way, the excursions of the sphygmograph could be followed at the same time that auscultation was performed. The result was this. During the formation of the ascending line, the first sound and the murmur were heard; when the apex of the curve was reached, there was a pause; and the second shorter sound corresponded to the elevation in the catacrotic line. Both these phenomena were thus perfectly isochronous, and therefore were due to the same cause. As regarded the remaining nine cases, the double sound was heard in none; a spontaneous second murmur was perceived in three only; in the remaining six, nothing was heard during the second moment unless strong pressure were applied by the finger below the point of auscultation, when a weak murmur was heard. Dr. von Bamberger regarded the explanations given by Traube, Gerhardt, and Landois, as untenable; and said that the phenomena could only be explained by Duroziez's theory. The secondary rise in the descending line was due to a recoil wave; if this were powerful, a sound was produced; if weaker, a murmur; and if it were very slight, a murmur could be produced only by increasing the tension in the vessel. The circumstance that the murmur (or sound) was almost always heard only in the femoral and very rarely in the axillary artery (Friedreich), and not in the carotid, subclavian, or other large arteries, was explained by the long straight course of the femoral artery rendering it more favourable for the

formation of a strong recoil wave than any other artery. Dr. von Bamberger remarked that the phenomenon to which he had referred was of much importance in the diagnosis of aortic insufficiency; in cases, for instance, where the presence of pericarditis prevented the endocardial murmurs from being heard.

February 23. *Atresia Vaginæ.*—Dr. Schlesinger showed a woman, aged 35, the subject of atresia vaginæ. She had already had six normal labours, and was expecting her seventh confinement in a few weeks. Last summer, a year after her last confinement, she became an out-patient at the hospital on account of profuse menstruation. Vaginal and rectal examination ascertained that there was atresia of the upper third of the vagina, with a central depression, through which a sound could be introduced into the uterus. There was no cicatrix at the lower part of the vagina; and no cause could be ascertained for the atresia. The menorrhagia was cured by subcutaneous injection of ergotin. An operation would, probably, be necessary when labour took place.—Dr. Voigt had met with a similar case, in which labour was completed spontaneously. The woman, however, died of puerperal fever, and was found to have an uterus bicornis, in one horn of which the fœtus had lain.—Dr. Heschl regarded Dr. Schlesinger's case as one of cicatricial stricture. Congenital atresia of the vagina was generally found at the junction of the upper and middle thirds; and in one side there was a foramen, and on the other a *cul-de-sac* with the opening above. He regarded these formations as remnants of the Müllerian ducts, and the vaginal septum as the remains of the tissue lying between the ducts. This form of atresia constituted the slightest form of double vagina.—Dr. Von Massari had observed several cases of cicatrix in the vagina, following ulceration in typhus, &c. In one especially interesting case, there was a cicatrix in the neighbourhood of the vaginal orifice in a woman pregnant for the second time. During labour, which was somewhat protracted, there was so great distension of the cervical canal that rupture was obviated only by making an incision in the cicatrix and delivering by forceps.

March 2. *Absence of the Vagina.*—Dr. Karl Von Rokitsky, jun., described a woman the subject of absence of the vagina. She had applied to him seven weeks previously on account of severe pain during coitus. On examination, it was found that coitus had taken place *per urethram*, and that the entrance of the vagina was completely closed. The woman presented the true female type. Menstruation was said to have commenced at the age of 17; it had been regular, though scanty, up to seven months ago, when it ceased. Examination *per rectum et vaginam* detected the presence of a rudimentary uterus and appendages. At the woman's earnest request, Dr. Von Rokitsky undertook the formation of a vagina by making an incision four-tenths of an inch long, about half an inch below the orifice of the urethra, dissecting downwards with forceps and scissors, so as to form a *cul-de-sac* about an inch and a quarter long, which could be extended to a greater depth in the direction of the pelvic cavity. The operation was not followed by any constitutional disturbance, and produced the desired result.

*Variety in the Circle of Willis.*—Dr. Chiari showed a preparation, in which the basilar artery gave off from its under part a branch as large as itself, which passed forward through a foramen in the dorsum sellæ and the sella Turcica, and opened into the



right internal carotid. Two similar cases are recorded in literature.

*Tuberculous Ulcer of the Lip.*—Dr. Chiari also showed a specimen of tuberculous ulcer of the lower lip, taken from a man who had suffered from an advanced stage of tuberculosis of the lungs and intestines.

*A Simple Acoumeter.*—Dr. Adam Politzer showed a simple apparatus, devised by him for measuring the hearing power. It consisted of a steel cylinder, 27 millimetres (1.08 inch) long, and 4 millimetres (0.16 inch) in diameter. A sound was produced by striking it with a small steel hammer. Both parts of the instrument were connected with a piece of hard caoutchouc, and the whole could be held in and managed by the hand.

*Therapeutic Galvanisation of the Cervical Sympathetic.*—Dr. B. Schultz referred to the observations of Renak, Müller, Bernard, and others, on this subject, and commented on the hitherto unexplained effect, observed in a large number of cases, which galvanisations of the cervical sympathetic had on affections of the upper and lower limbs. Similar good results were also obtained in progressive muscular atrophy, and Basedow's (Graves's) disease, when the galvanism was applied along the cervical spine. Dr. Schultz had found, by experiment, that electric stimulation of the cervical sympathetic acted also on the cervical region of the spinal cord.

#### ACADEMY OF MEDICINE IN PARIS.

Feb. 13, 1877. *M. Kergaradec.*—M. Chauffard read to the Academy a biographical notice of the late M. Kergaradec. The friend and fellow countryman of Laennec, he had followed his guidance in that field of successive discoveries which auscultation had opened up to him, and his name will remain connected with the history of the two phenomena which may be regarded as the most certain signs of pregnancy: the pulsation of the foetal heart and the placental murmur.

*Paralysis of the Ulnar Nerve by Compression.*—Dr. Panas recounted four cases in which the affected portion of the ulnar nerve became enlarged, hard, and painful both spontaneously and when touched, with paralysis of the subjacent muscles. The anatomical lesion could only be discovered in one of them, but it is doubtless common to the others, the symptoms being the same. It consists in a chronic progressive hyperplastic neurosis, characterised by proliferation of the connective tissue of the nerve with hyperæmia; whilst the nerve-tubes, forcibly compressed, and as it were strangled by the newly formed connective mass, had undergone a notable diminution of size. In the first case, the cause of the lesion was a sesamoid bone of the size of a bean, developed in the thickness of the internal lateral ligament of the elbow, and which, increasing, had ended by compressing the ulnar nerve, and bringing on paralysis. After the extirpation of this sesamoid bone, suppurative arthritis supervened, followed by death. In the second case, the paralysis was attributable to an old fracture of the elbow twelve years previously. In consequence of the fracture of the trochlea and the formation of a large callus, the groove between the trochlea and the olecranon being filled up, the nerve was drawn out and rendered superficial, exposed to external injury, whence hyperplastic neurosis and paralysis. The third case occurred in a man who, being surprised in a sudden squall whilst in a boat, used great exertions in rowing

for some hours in order to reach shore; ulnar paralysis showed itself six months afterwards, due no doubt to compression, and to the violent friction which the nerve had undergone. The fourth case was an example of incomplete paralysis of the ulnar nerve, produced by an enlargement of the trochlea, with obliteration of the groove which is traversed by the nerve, in consequence of an attack of dry arthritis. In the last three cases cure was obtained by electricity, which is the treatment specially adapted for this paralytic neurosis. In the relatively rare cases in which an exostosis, or any other morbid product, becomes the cause of compression, operation may be contemplated. Finally, when the paralysis and the neuritis which causes it are cured, its return must, if possible, be prevented, and for that purpose the patient should wear a metallic sheath to protect the nerve, which has become superficial, from all injury from without.

*Movements of the Spine.*—M. Jules Guérin continued the reading of his memoir on flexion movements and lateral inclination movements of the vertebral column. Every voluntary movement induces outside the muscles, which are the direct agents of them, the co-ordinating action of the muscles which harmoniously assist in the accommodation of the parts to the object to be attained. The characteristics by the aid of which it is possible to recognise the direct or auxiliary action of the muscles appropriated to each movement of flexion or lateral inclinations are these. 1. The direct agents have their insertions in the column itself, above and below the articulation, which is the centre of this movement, and in such a way that this articulation, between these two points, serves as a basis or lever to the mobilised portion. 2. Contraction, or the effort of the direct agents of the inclination, is created in the transversal plane. 3. The auxiliary agents of the inclination are those, of which the simultaneous contraction resolves itself into a result of which the action is mixed up with that of the direct motor.—*Atlanto-occipital Inclination.*—The direct agent is the rectus capitis lateralis minor. The recti minores and obliqui minores posteriores give to the head a certain degree of extension, so as to favour the movements of the condyles of the occipital bone on the articular surfaces of the atlas; their action, combined with that of the rectus anticus minor, gives a result perfectly situated in the working plane of the rectus lateralis minor. In certain circumstances, the collective and harmonious action of other muscles is added to the direct action of the atlanto-occipital muscles; they are anteriorly the rectus anticus major capitis, behind the rectus posticus capitis, the obliquus capitis superior, the splenius capitis, the complexus minor, and the sterno-mastoid.—*Cervico-dorsal Inclination.* The transversalis colli is the direct agent of this movement, and its most powerful action corresponds to the articular union of the two portions of the column on which it exercises leverage. The auxiliary agents are, in front, the longus colli, more especially by the anterior fibres; behind, the complexus, but especially the two scaleni.—*Dorso-lumbar Inclination.* The direct agent is the muscle described by Winslow under the name of spinalis dorsi, and by M. Sappey under the name of faisceaux épineux. There is also a bundle of fibres inserted into the small apophyseal hook of the third dorsal vertebra, and attached to the spinal apophyses of the seventh and eighth dorsal vertebrae. The auxiliaries are, in front, the psoas magnus; behind, the transverse and costal portions of the longissimus

dorsi, and the whole of the sacro-lumbalis.—*Lumbosacral Inclination.* The direct agent is the quadratus lumborum. The auxiliaries are all the muscles which arise from the sacrum to pass on to be inserted into the lateral portions of the spine along its whole length, the intertransversales lumborum, the sacro-lumbalis, and the longissimus dorsi.

February 20. *Wounds in Patients Suffering from Heart-Disease.*—For some years M. Verneuil has endeavoured to give prominence to the influence of constitutional diseases on wounds, and he now presented a memoir on wounds in patients suffering from heart disease. In such cases, the symptom was not one of morbid conditions of the whole organism; one organ only was attacked, and one function only was disturbed; but every change in this function was felt throughout the whole animal economy. The obstruction to the circulation favoured the production of hæmorrhage, and interfered with hæmostasis, granulation, and cicatrisation; the changes in the blood, also, nearly constant when the affection of the heart lasts for a certain time, and arrives at a certain pitch, almost inevitably rendered repair imperfect. Finally, the great viscera eventually deteriorated when the central circulation failed, and real diatheses going on to cachexia resulted. As in diabetes and scrofula, a relation might be established between the condition of the heart and certain complications which sometimes supervene on lesions, and which did supervene in two cases related by M. Verneuil. These were cases of wounds of the hand, and, though not serious at the outset, nevertheless, by a chain of complications, seriously imperilled life. In the first, a succession of hæmorrhages of extraordinary persistence had to be combated; in the second, simple leech-bites gave rise to so serious anæmia, that syncope of nearly half-an-hour's duration ensued. Nothing capable of explaining these accidents could be discovered in the constitution of the patients, but they were both suffering from heart-disease; and the hypothesis that the default of hæmostasis might be due to this affection was confirmed by the fact that, in one of the patients, the hæmorrhage twice followed a violent suffocative attack. The intensity of the diffused inflammation of the inflammatory œdema in relation to the trifling nature of the primary lesions, was also very striking; and it seemed a logical conclusion that the wounds and the supervening irritative action caused premature appearance in the injured parts of the serous infiltration, which, at a later period, must have appeared in the other parts of the body. A third fact worthy of notice was the influence of the wounds themselves on the cardiac affections, which were aggravated, and prevented prematurely the symptoms of the last stage.

January 29. *Influence of Sewer-Gases.*—M. Bouley had communicated the following facts to the Academy in relation to the influences of sewer-gases on the public health. 1. The workmen employed in the sewers, exposed to all the supposed morbid influences likely to emanate from sewage, have very good health; and it is not found that, during epidemics, the number of cases of prevailing disorders occur amongst these workmen in the increased proportion, which would show an increased intensity of the influences to which they are exposed. 2. No cases of disease have been described as occurring among persons visiting the sewers, such as might be attributed to the inhalation of sewer-emanations. 3. The workmen who are employed at the sewage depôt at Bondy remain free from the prevailing epidemic diseases. At the present meeting, M. Gueneau

de Mussy contradicted these assertions. M. Parent-Duchatelet had maintained the harmlessness of sewer-gas; yet, of thirty-two workmen in sewers, whose health he had under observation for six months, four (or one in eight) got typhoid fever. This proportion was the more significant since, as Chomel had observed regarding hospital attendants, a large number of sewer-workmen did not take up that calling until after the age which furnished the largest contingent of typhoid. A sort of acclimatisation must also be taken into account, and perhaps a certain number acquired a relative immunity through some slight attack, standing in the same relation to typhoid fever as mild varioloid to small-pox. As to the persons who visited the sewers, M. Gueneau de Mussy asked if their health had afterwards been under notice, so that it might safely be affirmed that they took no harm from these excursions. In conclusion, M. Gueneau de Mussy demanded the improvement of the sewers, so that they should no longer be in free communication with the atmosphere of the streets and houses, and especially that they should not be deteriorated by making them in communication with cesspools.

February 27. *Origin of Typhoid Fever.*—M. Jules Guérin sent a sequel to a memoir formerly communicated by him on the origin of typhoid fever. Its conclusions were as follows. 1. The fecal matters of typhoid patients contain, from the time of their leaving the body, a toxic principle capable of producing death in one class of animals within a period varying from some hours to a few days. 2. This property of fecal matter is common to other excrementitious products of typhoid patients, such as urine, blood, mesenteric liquid, and the detritus of the mesenteric glands and of the ulcerated mucous membrane. 3. These matters retain their toxic properties in great part for some months after their removal from the body. 4. The fecal matters of healthy persons or of persons suffering from other diseases do not contain the toxic principle which appears to be preserved by the excrementitious products of typhoid patients.

*Swallowing Sulphuric Acid.*—M. Laboulbène exhibited the œsophagus, stomach, and intestine of a man who had accidentally swallowed two or three mouthfuls of sulphuric acid of 66 degrees of strength, (see LONDON MEDICAL RECORD, Feb. 15, 1877). After the expulsion of the masses already described the patient was able to swallow carefully masticated food; but he gradually became more and more emaciated. After January 15 he rejected even liquid food; and on the 20th, nearly four months after he had swallowed the sulphuric acid, he died in a state of extreme emaciation. The result of the necropsy was as follows. The stomach was of a whitish colour, and was reduced in size; it presented a serious disposition of its greater curvature, which was divided into three lobes. At the pyloric region it was much constricted, and showed considerable induration for the extent of about two inches, and extending to a small portion of the duodenum. There was nothing abnormal in the rest of the digestive canal. When an opening was made, the mucous membrane, from more than four inches below the origin of the œsophagus to the cardia, was found to have almost entirely disappeared. Only a few round fragments were found, their whitish colour contrasting with the yellow base of this region. The internal surface of the stomach was smooth to the touch, of a whitish colour, at certain points presenting reddish lines. At the level of the greater curvature, a rather ex-



tensive spot of redness, due to extravasation, was found close to the cardia, for an extent of four-fifths of an inch; and a little further off, on the great curvature, erosions of a whiter colour were found, on which cicatricial fibrous bands stood out in relief. At the level of the pylorus, the stomach became suddenly contracted, and, for an extent of two inches, the cavity was so small that it only admitted a probe. At this point, the walls were completely hypertrophied, thick, fleshy, and of considerable consistence. The contents of the stomach were yellowish, with whitish coagula. There was nothing else abnormal, except the absence of fat in all the organs. The histological changes were as follows. From the lower part of the œsophagus to the duodenum, the mucous membrane was replaced by a layer of granulations lying bare on the areolar and muscular fibres. The interstices of the connective tissue fibres were filled with newly formed cells and nuclei. The lesion, though a little less evident at the points apparently least changed, was more so at the pylorus, where the inflammation extended to the connective tissue between the muscular layers, and where a large quantity of fusiform cells, leucocytes, and proteic granulations were found. Here, then, was a man who had survived the loss of his gastric mucous membrane for more than two months. It is probable that, whilst the pylorus remained open, he was able to receive nutritive substances into the intestine, and that inanition supervened only when the narrowing of the pylorus was considerable. From this it might be concluded that the mucous membrane of the stomach is not indispensable for the digestion of certain aliments, and for the preservation of life, and that the intestines may, for a certain time, perform the function of nutritive absorption without it.

#### ACADEMY OF SCIENCES IN PARIS.

*Urine.*—MM. Pasteur and Joubert presented their remarks on Dr. Charlton Bastian's communications on the subject of the changes in urine. In contradiction to Dr. Bastian's assertions, the writers declared that urine never produces bacteria when it is neutralised by freshly dissolved solid potash.

*Fibrine.*—M. A. Schmidt communicated the results of his experiments on the coagulation of fibrine. This coagulation seemed to him to be the result of a special fermentation which transforms soluble albuminoid substances into insoluble substances. This ferment originates in cells containing protoplasm, which are removed from their natural conditions of existence.

*Cinchodine.*—M. Weddell sent a note on the advantages possessed by cinchodine in comparison with quinine, in the treatment of intermittent fevers. The facts brought forward show that the patients recover equally well under the former drug, and that its use has advantages on the score of economy.

*Sensibility.*—M. P. Bert sent a communication on the transmission of excitation in the nerves of sensation. He had made a very curious experiment showing that the excitation of the nerves of sensation is propagated as well towards the extremities as towards the centres. He fastened the end of a rat's tail to the subcutaneous tissue of the back; then, after having cut the tail in the middle, he saw that the excitations of this dorsal portion communicated with each other along the back; but after two days the nerves separated from their trophic centre were atrophied.

*The Torpedo.*—M. Marey communicated the results of his experiments on the character of the electric discharges of the torpedo. He has established that these discharges are analogous to the electric currents of which a muscular contraction is composed.

*Contractility.*—M. Milne-Edwards presented a note by M. G. Carlet on the return of contractility in a muscle from which this property had disappeared under the influence of powerful induction-currents. The contractility returns under the reparative influence of the nutrition induced by weak currents.

*Glycerine.*—M. Catillon communicated his researches on the physiological and therapeutic properties of glycerine. He obtained in guinea pigs an increase in the body-weight under the influence of 50 centigrammes of glycerine injected daily. 1. This substance diminishes the combustion of fats and nitrogenised substances, whilst favouring the phenomena of nutrition. 2. The diminution of urea in the human subject has been ascertained to be from 6 to 7 grammes *per diem* under the influence of 30 grammes of glycerine diluted with from 8 to 10 parts of water, and taken in three doses before meals. A larger dose did not produce a greater diminution in the excretion of urea. M. Catillon had not been able to make a comparative estimate of the amount of urea passed in twenty-four hours; he had only been able to decide that the proportion in the urine was very small after the administration of glycerine. 3. Glycerine favours assimilation, by exciting the appetite and promoting the regularity of the digestive functions. 4. The urea contained in the blood of dogs submitted to the administration of glycerine is also lower than the average, which proves that the effect of this substance is to diminish production, and not to place any obstacle to the elimination of the urea. 5. The urine is one way of eliminating the excess of glycerine, and it begins to show itself in man when the dose taken exceeds 20 grammes; after a dose of 30 grammes, M. Catillon had found from 3 to 3.50 grammes, and from 12 to 14 grammes after a dose of 60 grammes. 6. No glycerine was found in the perspiration. 7. No glycerine was found in the feces whatever dose was taken. 8. Glycerine does not remain in the blood. M. Catillon sought for it one, two, and three hours after very large doses had been taken, without being able to obtain any appreciable quantity. It must be almost entirely burned in the blood, to the same extent as it penetrates it, for it is totally absorbed, and only a relatively small quantity is found in the products of excretion. 9. A notable diminution of the proportion of sugar was found in the blood of dogs submitted for long together to the influence of glycerine. But this influence of glycerine only seems to be exerted after ultra-therapeutic doses; and M. Catillon was inclined to believe that the explanation of the favourable effects which glycerine may produce on diabetic patients, must be sought in its action on the production of urea, and on the digestive functions. 10. M. Catillon has never found either sugar or albumen in the urine after the administration of glycerine in any dose whatsoever. 11. Glycerine possesses decided laxative properties; a dose of 15 or 30 grammes induces, if taken into the stomach of an adult, an easy and soft motion; sometimes, too, the laxative effect does not increase with large doses administered all at once. 12. Glycerine, introduced into the stomach in large quantities, may act in two completely different ways, according as it is taken, in single large doses, or in repeated small doses. In the first

case, when the proportion of 15 grammes to the kilogramme of the body-weight is reached, fatal accidents may supervene, and lesions comparable to those of acute alcoholism are found. In the second, on the contrary, no symptom but a rise in the temperature is manifested. 13. According to Nos. 2, 5, 11, it would appear that the rational dose of glycerine is from 15 to 30 grammes a day, if its functions for the restoration and regulation of the digestive functions are to be utilised. A dose of from 40 to 60 grammes, taken at once, may produce slight irritation of the kidneys and bladder. If we wish to give larger doses, as Dr. Harnach does in the treatment of diabetes, (180 to 360 grammes), it is important to divide them so that they may be tolerated. These large doses do not appear to offer any advantage, and they bring on intestinal disturbances. They cause no other inconvenience; on the condition, however, that a quantity equivalent to 15 grammes to the kilogramme of the body-weight be not taken at once.

## REVIEWS.

*The Practitioner's Handbook of Treatment; or, the Principles of Therapeutics.* By J. MILNER FOTHERGILL, M.D., M.R.C.P., etc. Pages 579. London: Macmillan and Co. 1876.

Dr. Fothergill bids fair to rival Philemon Holland in the fecundity of his prolific pen. This worthy, like the late Bishop Philpot of Exeter, and Emanuel Swedenborg, was such a voluminous and continuous scribe, that it is said a moderate sized library might have been filled with his writings alone. All the three lived to a good age, Holland being in his eighty-fifth year when he died in 1636.\* Most men are a little prejudiced against a great rapidity of production in literature, although the examples of Sir Walter Scott, Lord Lytton, and Charles Dickens show that quality is not necessarily impaired by quantity.

The charge of undue haste can, however, scarcely be urged against a book which, the author informs his readers, has been nine years in preparation. This is certainly the best book Dr. Fothergill has published since the prize Essay on Digitalis, which may be said to have introduced him to the medical public. A book of this kind has long been urgently wanted. Practical men, whose bread is earned by curing or trying to cure, or at least relieving the numerous ailments of human creatures, call for something more suited to their purpose than the refinements of diagnosis, and the hair-splittings of pathology, which medical science has been offering them lately. They have bought treatise after treatise, manual upon manual, of medicine and surgery, in the vain hope of finding some better, more speedy, and more pleasant methods of cure or relief than those which they already know. And not a few of these works have either almost altogether ignored

treatment, or have written of it so superficially, as to make it evident that the patient's first thought was the very last in their minds. And yet every honest man in our profession feels that, if he does not do his very best for the relief of his client, he sinks to the level of those quacks whom he has justly been taught to despise. Nay, may we not say with propriety, that he who takes a fee, and makes no attempts to benefit his patient, falls below the level of the nostrum-vendors,

Pharmacopœia . . . . . balatrones, hoc genus omne?

For these, as a rule, do relieve pain by their nostrums, and give their victims present ease, though perhaps at the cost of future suffering. The hearty reception given to new remedies, such as chloral-hydrate, and salicylic acid and its compounds, show the earnestness of this desire for improved therapeutics on the part of British practitioners. Nay, so eager are our brethren in England and Wales, not to mention Ireland and Scotland, to welcome all practical improvements, that there is actually danger lest a new generation of students should grow up caring only for the art of medicine, and not for the science.

Dr. Fothergill's book is a move in the right direction. It is a laudable attempt to combine the theory and the practice of medicine together; to show why we order such and such medicines, and pursue this, that, or the other kind of treatment. And, although it may be considered an ambitious attempt to cover the whole ground of medical practice in the compass of less than six hundred pages, it must be confessed that on the whole the work is well done. If we were to take exception to any one part in particular, it would be to the meagre outline given of our means for reducing excessive temperature, or hyperpyrexia. Pages 71 to 97 inclusive are devoted to this subject, confessedly one of the most important in the whole range of therapeutics; and this scanty space for such a subject is more eloquent on the point than any words of criticism. It is true that most of the reliable means for lowering excessive temperature are mentioned, but there is a want of discrimination as to their relative power or suitability. Tepid sponging, far safer than extreme cold, and far more durable in its effects, is mentioned with less favour than that depressing agent, chloral-hydrate. Quinine is mentioned as used in typhoid fever; but the marked effect of iodide of potassium in syphilitic pyrexia is briefly passed over under the heading of salines (pages 86 and 87), and is not given more prominence under the subject of syphilitic cachexia. The importance of rest in diminishing the production of heat, and the way in which opium and other narcotics which, *per se*, tend to raise temperature, actually lower the fever-heat of the body, by giving rest to the heart, and quieting the nervous system, are only mentioned incidentally. Indeed, the idea that much of the production of heat in the human body is the result of the mechanical work done by the heart, which Haughton and Buchanan reckon at between forty and fifty foot-tons *per diem*, seems scarcely to have presented itself to our author. Yet this is the foundation of the modern medical treatment of aneurism, which has proved so successful in the hands of Joliffe Tufnell, and others.

Where a comparatively large dose of any medicine, such as one ounce of liquor ammoniæ acetatis, or five grains of carbonate of ammonia, and so on, is ordered, no notice is taken of it, and the young practitioner is either left to infer that these are usual doses, or that a misprint has occurred. On the im-

\* This writer is said to have written one large folio with a single pen, on which he wrote:

"With one sole pen I writ this book,  
Made of a grey goose quill;  
A pen it was, when it I took,  
And a pen I leave it still."

On which old Fuller wittily and sarcastically said: "He must have leaned *lightly* on the nib thereof, though *weighty* enough in other respects."



portant subject of doses too little is said.\* And the good old rule of giving iron (like arsenic) with or after food, is reversed at page 15, without a word of caution as to the nausea and sickness often caused by astringent and acid preparations of iron when taken before food on an empty and irritable stomach.

But these are very minor blemishes after all. The book is a really good one. It is thoroughly practical, *au niveau* with the scientific opinions of the day, as far as is possible for any book to be, when the said opinions are themselves, in many cases, as shifting as the coloured pictures of a kaleidoscope.

A good idea of the style of the book may be gleaned from the following extract on blisters and counter-irritation of the skin. It is taken from pages 304-8.

“§133. *Irritation and Counter-irritation.*—It has long been a practice in the art of medicine to resort to agents capable of exciting activity, and especially vascular activity, in a part, when applied locally, to relieve abnormal action going on elsewhere. This artificially excited action was supposed to relieve and reduce the pre-existing malady, and this line of treatment has been denominated variously, according to circumstances, irritation and counter-irritation. It took its origin, probably, in observations of the following kind: in the exanthemata, the more copious the eruption, the less internal complications, ordinarily at least; and that any retrocession of the eruption was followed by gravesence in the internal affection; in the metastasis of gout, of mumps, etc., as soon as another part became affected the part originally implicated was relieved; and in the relations of cutaneous maladies to internal diseases in chronic disease, the disappearance of the rash often being followed by a distinct exacerbation in the visceral ailment. By a far from unintelligible induction, our predecessors concluded that to set up artificially some irritation elsewhere would exercise a beneficial effect over the disease they were essaying to treat. There was an element of truth in their conclusions, and unquestionably hot pediluvia do often relieve head-symptoms, and blisters to the legs are found useful in diminishing congestion of the contents of the cranium. The advocates of blistering could also take a pretty firm stand on the ground that such treatment did relieve and diminish accumulations in the serous sacs, as of the thorax, the abdomen, and the articulations. The good effects here are distinctly intelligible by the law of Schroeder van der Kolk, that the vascular supply of the deep-seated parts is derived from the same arterial trunks as that of the superficial parts. Any dilatation of the cutaneous arches, and increased blood-flow in the superficial distribution, will diminish directly the current in the deeply-seated vessels. Thus, in inflammation of the pleura, for instance—the costal pleura that is—the application of dermal irritants, either heat or vesicatories, will dilate the cutaneous terminations of the intercostal arteries, and diminish the blood-supply to the pleural arterioles, and so lessen the vascularity of the inflamed area. This is clear enough. In the same way, dilatation of the cutaneous vessels of an articulation, say the knee, will be followed by a lessened blood-flow in the deep articular branches of the arterial trunk common to both.

Further, Brown-Séguard found that the renal arteries contracted on irritating the skin over the kidneys. This indicates that there is something more in this matter than the mere hydraulic side of the question. Max Schuler has found that the application of large mustard blisters to the cutaneous surface produces, first, a mere passing dilatation of the vessels of the pia mater, and then a more persisting contraction of them; the latter being so prominent that the contraction withstood the effects of agents which normally produced dilatation of these vessels. We all know that plunging one hand into cold water will lower the temperature of the other hand, and that ‘cold applied to part of a bat’s wing causes contraction of the vessels of the corresponding part of the opposite wing’. From all this we can comprehend how it may be that counter-irritation may exercise a beneficial effect in cases of inflammation where the vascular supply of the inflamed part is not derived from the same arterial trunk as is that of the cutaneous surface operated upon. But while admitting this, we must own that the *modus operandi* here is far from being so clear as it is in those cases where the common vascular supply exists, as in counter-irritation in inflammations of the pleura, peritoneum, or the serous sacs of the articulations; or in those more chronic affections of joints where there is deep-seated hyperæmia, which not rarely produces elongation of the diseased limbs, from the continued vascularity of the epiphyses. The law of Schroeder van der Kolk also holds good of the nervous distribution; and as the costal pleura, and the skin of the thoracic parietes are alike supplied with blood from the intercostal arteries, so are they furnished with their nerve-supply from the intercostal nerves. Thus in the articulations, the deep-seated and the cutaneous nerves spring from common trunks. Consequently, the application of analgesic agents to the peripheral extremities of the superficial distribution exercises an effect upon the deep-seated terminations. That such is a fact is unquestionable, but it is not yet clear how the end is brought about. Either there is some reflex action induced, or some deadening effect is achieved which counteracts the pain-producing irritation of the deeper seated terminal fibres, possibly in the common trunk. Be this as it may, there is no question as to the utility of the application of sedative, and analgesic agents to the surface of an affected part, in practice. In neuralgia, gout, rheumatism, as well as structural lesions, the application externally of opium, aconite, belladonna, chloroform, and even chloral-hydrate produces desirable effects. It is, indeed, by first recognising the fact that good does actually result from these therapeutic measures, that we shall be led to investigate the working of them, and then perhaps some day even understand how the results are achieved. As well as these more localised effects of external applications, there are wider and more general consequences of their employment which may well occupy our attention for a moment. The application of epispastics to large areas of the surface for a brief time, so that they are rubefacients rather than vesicants, in cases of collapse, shock, or even the typhoid condition, is a well established practice. The results are scarcely the consequences of the pain inflicted solely—for pain, when not too excessive, produces a stimulant action. There is probably some effect produced upon the vascular system generally. ‘Dermal irritants’, writes Wood, ‘have a direct tendency to arouse or excite the system, and may be used as general stimulants’. When

\* An old plan, recently revived in America, of paying attention to *body-weight* in the regulation of doses, might have deserved mention. Of course as regards narcotics, it is better, with infants and young children, to err on the safe side. But suppose a man of ten stone=140 lbs., take fourteen grains of chloral hydrate thrice daily, then a child aged six or seven years weighing 43 lbs., would probably take three and a half to four grains with safety.

so used as passing rubefacients, probably the action upon the intracranial vessels is limited to that dilatation, which, Max Schuler observed, occurred in the vessels of the pia mater on the first application of blisters; but which was followed by subsequent contraction on the persistent application of the vesicant. There is nothing in such a view inconsistent with what we have seen as the primary and then the secondary effects of several neurotic agents, as opium and alcohol for instance. The use of dermal irritants as stimulants is indicated in states of depression rather than advanced exhaustion; their application should be brief, and be accompanied by the exhibition of other stimulants somewhat freely."

This account is followed by the relation of some cases in which blisters seemed to produce the most happy effects. And so the theory and the practice are correlated throughout this, the best of all Dr. Fothergill's published works.

*Winterkuren an Schwefel-Thermen.* Von Dr. ALEXANDER REUMONT, in Aachen. 8vo., pp. 42. Wien, 1877.

Dr. Reumont, well-known for his writings on Aix-la-Chapelle, gives in this work a short account of some of the places at which bath cures can be carried on in winter. He limits himself to sulphur-baths, and to those of the thermal class, which, as he truly remarks, are the only ones adapted for winter treatment. He leaves it to others to describe places adapted for winter cures, such as Wiesbaden, but which have not sulphur-waters.

Dr. Reumont considers it of paramount importance that there should be good house and bath accommodation supplied, wherever a winter cure is carried on; and he is of opinion that these are to be had best at Aix-la-Chapelle, Baden in Switzerland, at Amélieles-Bains, and Le Vernet, in the Eastern Pyrenees, and at Aix-Reale, near Catania. He also gives an account of various other thermal baths, where the winter arrangements are not so good.

The forms of disease of which Dr. Reumont believes the cure can be well carried on in winter, are syphilitic and mercurial affections, chronic skin-diseases, the sequelæ of wounds and injuries, rheumatic affections generally, and gouty affections of the joints—although he admits that, on the whole, these two last are best treated in summer. Further, chronic laryngeal, tracheal, and bronchial catarrhs are best treated, with the aid of southern climate, at Amélie and La Vernet, or Aix-Reale, although they can also be treated effectively at Baden, in Switzerland, or in Aix-la-Chapelle. Dr. Reumont's observations, on a comparatively new subject, are well worthy of perusal.

*Manitou, Colorado, U.S. Its Mineral Waters and Climate.* By S. EDWIN SOLLY, M.R.C.S.E. 8vo., pp. 40. Saint Louis, 1875.

In his account of this new station, Mr. Solly has been somewhat diffuse. We did not look for a treatise on mineral waters in general, but for a pretty full account of the springs, and of the arrangements at them. However, the author has evidently taken pains in consulting the best authorities; and, if his account of the actual operations of the waters is imperfect, it is to be remembered that the springs seem to have been open only for three or four years. Manitou lies at a height of 6,350 feet above the sea, on the elevated plateau of North America, and is only five miles dis-

tant from the prosperous town of Colorado Springs, which is reached by the great central line of railway which connects the shores of the Atlantic and the Pacific. There is a good supply of horses and carriages, and many excursions can be made, especially to the pine-forests in the neighbourhood. It has already five hotels, said to afford unusually luxurious accommodation. Manitou possesses a number of weak carbonated wells, a sort of seltzer-water springs, and one with nearly nine grains of carbonate of soda in the pint; it has also some excellent and tolerably strong chalybeates. Some of the springs contain a little sulphate of potash, and have been termed purging springs; but the three grains to the pint, which is the most that any of them possesses, is a quite insignificant amount.

These waters are compared by Mr. Solly to those of Ems and Neuenahr, and even of Carlsbad. The soda-spring has some analogy with Ems; but the great difference, one which cannot be got over, is that while the European springs are all thermal, those of Manitou are cold. This at once makes an enormous difference in the mode of their application.

Nevertheless, we believe that the weak acidulated springs of Manitou may be very useful in gout and dyspepsia, and they are just the class of waters prescribed much in Germany in incipient phthisis.

The chalybeate, again, appears to be a very pure and excellent one, and is considerably more powerful than those of St. Moritz. It is, indeed, with St. Moritz or Davos that Manitou can be best compared. Throughout the greater part of the year the days are fine and bright, and the atmosphere remarkably clear, with sunshine. The winter, however, is the season in which most cases of consumption derive the greatest benefit, the air being then extremely dry, with no rain and little snow, the sun shining almost uninterruptedly, so that invalids can enjoy exercise without additional clothing; and although the variation between day and night temperature is often great, the absence of moisture, and the shelter of the hills, make it very little felt.

J. MACPHERSON, M.D.

*Hints to Mothers for the Management of Health during the Period of Pregnancy and in the Lying-in Room, with an Exposure of Popular Errors in Connection with those Subjects, and Hints upon Nursing.* By THOMAS BULL, M.D. New edition. Thoroughly revised by ROBERT W. PARKER, M.R.C.S. Eng., Surgical Registrar (formerly House-surgeon, &c.) at the London Hospital, late Resident Medical Officer to the Hospital for Sick Children. Longmans, Green, and Co., 1877.

That this little work has now reached its twenty-fifth edition is sufficient evidence of its practical value, and its appreciation by the general public. It is seldom that we have had the pleasure of reading a book which is at once so thoroughly scientific in the advice it tenders, and popular in its mode of expression. The editor has certainly acted wisely in making no attempt "to alter the homely style in which the volume was originally written."

The first few pages are devoted to some plain sanitary directions with regard to water, ventilation, and drainage, and the author then proceeds to discuss "the management of health during pregnancy." The condemnation of over-feeding during pregnancy is good no doubt, but that "nature would appear to solicit a reduction in the quantity of aliment rather



than an increase; for, almost the very first evidence of pregnancy is the morning sickness," is, we believe, not supported by the modern views of the cause of morning sickness. The directions for the prevention of sore nipples are exceedingly good; were they followed more universally than they are at the present time, we believe the number of broken breasts would be much diminished. The list of remedies for the relief of morning sickness would have been much more complete had not the two most useful drugs, viz., creasote and oxalate of cerium, been omitted. We can find no precise directions for the administration of enemata in adults; they are recommended for general constipation, but no distinction is made between their employment for habitual constipation and their employment for obstinate obstruction of the bowels. As the book is intended for readers who are often unable to procure medical advice at all, it would be well that these and some other practical matters should be thoroughly understood. Enlargement of the veins of the "*external parts*" is spoken of as occasionally occurring. It would, perhaps, have been more correct to speak of it as a common occurrence; we have seen it very frequently. In a work intended for lay readers, we are surprised to find half-a-dozen leeches recommended for the enlargement of the breast after conception, and from ten to twenty drops of laudanum spoken of as a harmless remedy for cramp. Bromide of potassium might certainly have been suggested for the latter. The author points out the force of habit in miscarriages, but we suspect that, were these cases more carefully inquired into, a number of them would be found to present some displacement of the womb. We think it would have rendered this work more valuable had the author laid greater stress upon the necessity of a vaginal examination in such cases. The author's "*Hints for the Lying-in Room*" are exceedingly good; but here, again, we find no precise directions for the administration of a vaginal injection. We are surprised to see it recommended that the breasts, in a primipara, should remain untouched until about the third day. This is not the common practice, to say the least.

As a popular book for mothers and nurses, this little work may be thoroughly recommended. And we feel sure that there are few monthly nurses who will not be the wiser for a careful perusal of it.

ALFRED SHEWEN, M.D.

*The Anatomy of the Head.* By THOMAS DWIGHT, M.D. Boston: H. O. Houghton and Co., 1876.

In attempting to mark out for the anatomical student some clearly defined path, across well-trodden but difficult ground, Dr. Dwight starts on a right course when he says anatomy can be really understood only when learnt and studied as a whole. Too often, lost in the intricacies of detail, students wander up and down at random till an examination shows them at last how helplessly they are bewildered. Such a difficulty Dr. Dwight has endeavoured to combat, and to a great extent has overcome. Taking each region of the head in its order, he gives a short, but concise and accurate, sketch of the parts entering into it, both individually and in relation, mentioning all the important facts, but those details only which are essential to the plan of the work. At the same time, he gives many new and interesting notes quite up to date, though some (as four pages on the jugular foramen) are, perhaps, too expanded. Intermixed are many surgical hints. Errors are few; but one crops up here and there, as when the incus is said to close

the fenestra ovalis. The style is concise and clear, but not abrupt, and flows on easily, except for an occasional Americanism as "*on front*" for "*in front*." Marginal notes, not very full, are given. Scattered through the book are a few new wood-cuts, chiefly of sections; and, at the end, are given several excellent lithographed plates of frozen vertical sections, as yet novelties in England. The book itself is of handy size, well printed and bound, and may confidently be recommended to all who wish to find in anatomy something more interesting than a confused heap of heterogeneous odds and ends.

## NEW INVENTIONS.

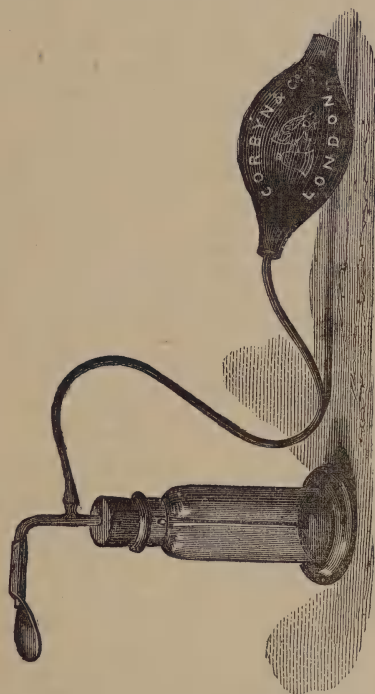
### CASELLA'S CLINICAL THERMOMETER.

The history of the clinical thermometer still remains to be written. When it is fully written, we believe the large share in the merit of introducing this now all-important instrument must be given to Mr. Casella, the well-known philosophical instrument maker in Holborn. Mr. Casella twenty years ago had adopted a suggestion of Professor Phillips of Oxford, from which he designed the well-known registering maximum thermometer for meteorological purposes. In that instrument, by the use of the mercurial index, he overcame what had up to that date been the great difficulty in getting accurate and delicate results. At the same time, by greatly narrowing the capillary tube of the thermometer, he contrived an instrument, of which the register should remain unaffected either by removal from the heated surface, or by variation of position. Up to that date, all thermometric clinical observations had to be read and registered *in situ*. Having invented this instrument, Mr. Casella took it to the late Dr. Babington, of Guy's Hospital, and brought it under his notice, as being likely to prove a valuable instrument for clinical observation and research by medical men. Dr. Babington fully recognised its merits, but observed that medical men were not very apt to increase their armament of costly instruments, and therefore he feared that no great or extended popularity could be expected for an instrument of this kind. The subsequent researches of Wunderlich, however, attracted much more attention to the subject of clinical thermometry; and the late Dr. Parkes, being in communication with Mr. Casella on the subject of the manufacture of certain other philosophical instruments, directed the attention of Dr. Aitken, of Netley, to Mr. Casella's beautiful clinical thermometers. At the instance of Dr. Aitken, who wished to be furnished with a registering thermometer for clinical use, Mr. Casella modified the arrangement of his instrument so as better to suit medical purposes, and all the subsequent clinical thermometers are slight modifications, either in size or in some other not very important particular, of those of Casella. The very great improvement which Mr. Casella has since made in the clinical thermometer is by a device by which he prevents the register from being shaken down into the bulb. This device consists in placing a slight expansion above the contraction just above the bulb. The result of this arrangement is that, when the index is shaken down, a small piece of mercury, which constitutes the index, collects in the shape of a globule in the little cup-like expansion, and thus is prevented from passing through the finely contracted portion of

the tube into the bulb below. Casella's clinical thermometers, thus completed, are the most perfect which we have ever inspected, and great credit must be given to the maker for the skill and ingenuity with which, in the first instance, he devised this instrument, and with which he has subsequently modified and improved it.

#### CORBYN'S THROAT-SPRAY.

This is an extremely convenient little instrument, which is not likely to get out of order, and furnishes a very perfect spray. The addition of the tongue-depressor is ingenious and simple, and increases the efficiency of the instrument. The instrument is one which the medical man may safely recommend to his patient, feeling assured that it will not get out of order, and that it will perfectly answer the purposes of local medication for which fine sprays are



now so largely used, both in respect to the throat and mouth, and for other purposes. For convenience, the various parts of the throat-spray apparatus are fitted into a neat velvet-lined box. It is manufactured by Messrs. Corbyn, Stacey, and Co., 300, High Holborn.

#### CALLARD'S IVORY JELLY.

This jelly is prepared from pulverised ivory, and is, therefore, rich in the phosphates and in bone-salts. Phosphatic medication has very much advanced of late in professional favour. In this form we get the phosphates in what is, probably, their most easily assimilable state. The dietetic value of ivory jellies for consumptive patients, and for other persons who are the subject of defective nutrition, and in whom the bone-salts seem to be in deficiency, has long been recognised, and this preparation appears to us to be a useful and reliable one. An ordinary day's quantity of jelly contains about five grains of the soluble phos-

phates, which is quite as much as, if not more than, could be absorbed, inasmuch as these salts are certainly slowly and sparingly taken up into the system.

#### THE GRANVILLE, ST. LAWRENCE-ON-SEA, RAMSGATE.

It is not often that we seek to describe an hotel, but the establishment which bears the above name is so distinguished for its salubrious and commanding situation, for the completeness of its equipment in all that is necessary to charm a guest, and is, moreover, so renowned as bearing witness to the enterprise of its proprietor, who spares no time or cost to render it worthy of this or the succeeding century, that we think a page would be well spent in bringing it before the notice of our readers. The building was originally arranged as a terrace of mansions, eight in number, and was designed by the late distinguished architect Mr. Welby Pugin, whose genius can be seen in every detail of the structure, from the general arrangement of the rooms down to the meanest item of mediæval furniture which there finds lodgment. The primary intention of the structure having been diverted, and the idea of a vast hotel fixed upon, no expense was spared to render it a resort of the very highest character, and one which would favourably compare with, if not successfully eclipse, the largest and best establishments known to visitors in the fashionable cities of America; and that this high conception has been thoroughly wrought out, will be conceded by all who pass a few days in examining and enjoying its varied resources. Since the death of Mr. Pugin, the huge block has also been considerably enlarged by the erection of a *campanile* and magnificent dining and recreation halls, designed by and completed under the eye of the well-known London architect Mr. Wimperis.

The "Granville" stands at some little distance from the edge of the cliffs; and since the acquirement of the fore-shore by the proprietor, the intervening space is now traversed by a broad road, running immediately before the hotel, in front again of which is situated a wide *parterre* with flowers, fountains, and lounges. Nearest the sea an easy sloping descent has been made down to the sands, and a number of shops are in course of erection at this lower level for the benefit of the loungers. Here also will be erected a necessary auxiliary restaurant; whilst between them and the stretching tide a safe sea-wall has been constructed of concrete blocks. This road will form a drive, &c., and is to be called "The Granville Marina", St. Lawrence-on-Sea. As to the sands, rich with occasional reefs, almost honeycombed with rock-boring shells, and therefore dear to the conchologist, all who know Ramsgate sands even by repute will take their beauty for granted. There is none of the rolling flint shingle, as in Brighton, to wound the feet and vex the temper. Standing on these sands and looking up to the hotel, the view is magnificent; the sea-wall, the rugged cliffs of chalk, cased with concrete where necessary, and relieved with arches, the sloping road, and above these the towering hotel, all these strike the eye with a most charming effect. Up above, the pedestrian, fond of a breeze, can enjoy himself almost in any weather; and down below, those who are fond of warmth and shelter will find them even on a blustering day.

The various rooms into which the "Granville" is



divided out are almost legion. There are billiard rooms, bowling alleys, a theatre, a library and reading room, a concert room, a supper hall, smoking rooms, and a dining room, which will compare with any in London, and having a magnificent mantelpiece of carved stone which cost £500. These reception and recreation rooms are for the most part fitted up with stained glass windows and gorgeous decorations, and where open to the roof the timbers are handsomely stained. Nor is the public outside altogether debarred from enjoying this splendid palace; for restaurants and smoking rooms exist for them also in the outer rear. The bedrooms are many and well fitted up; and sitting rooms, breakfast rooms for families, for ladies and for gentlemen, are scattered over the building. The kitchen is arranged on the best model, and accommodates everything that a *chef* could desire, from an open fire able to roast an ox, down to the latest combination of close range, gas stove, for hot plate. There are also a summer larder and a winter larder, a large stillroom and buttery, and, in fact, everything that can be found useful in a culinary point of view. The dairy department is supplied from the home farm; and as for wines of every description, they are no sooner desired than provided. The cellars are well stocked with choice wines, and every mineral water known to the connoisseur, from Apollinaris to Vichy, is here stored. As for the plainer soda waters, they are manufactured upon the premises, and bottled by machinery.

In order to render the establishment self-contained, one portion of the basement has been appropriated as a laundry department. The washing and wringing is performed by steam. There are also steam mangles in the ironing room, and, what is of great importance, an airing chamber, which sets at rest all fear of damp linen. When the mattresses have been some time unused, they are also aired in a hot room, and so deprived of the moisture which is always common to littoral towns. In the other part of the basement are allotted spaces for a smithy, a fitting shop, and a carpenter's shop; and it is a curious sight to see huge pieces of iron designed for the ornamentation of the balustrades on the esplanade, bent, sheared, and punched by the steam machinery there. It is also unique to find huge boilers for the elaboration of steam for various purposes in such a place, to say nothing of an engine of 17-horse power, which was designed and manufactured upon the spot. If anyone, too, desire to see an useful contrivance which originated here for the clearance of the steam-gauge from opaque substances, the courteous manager of the establishment, who designed it, will, we are sure, explain it to him. The engine-power, besides being required for driving the machinery, is needed for the pumping up of the well-water, supplying the baths and closet cisterns, etc., as well as the sea-water, which is changed in the reservoir with every tide, and which supplies the *bains*. The water for potable uses is furnished by a constant service from the water-company's mains, and is filtered by high pressure means on the silicated carbon principle.

When we come to speak of the general sanitary arrangement, we are perforce bound to be equally commendatory, and even what the most fastidious would recommend will shortly be carried out, since the whole of these arrangements are being now overhauled with a view to bringing them up to high sanitary mark. The long length of sewer between the hotel and the outfall, is for its part ventilated into

the tall chimney-shaft of the establishment, and the foul air is thus in that way destroyed. Ventilation of the large rooms is achieved on the most scientific principles, and occasional shafts elsewhere testify to the care taken in this important element of healthiness in other portions of the buildings. The means of exit are ample and numerous, and little, if any, fault can be found with the complications of passages, always an adjunct with large establishments. The colours on the wall are cheery, and suit the æsthetics everywhere surrounding. Paint has been sacrificed to cleanly varnish; and wherever possible, tiled pavement supplants dirt-collecting wooden floors. Fire-hydrants, too, everywhere command the establishment.

The out-door arrangements also, upon which much depends, are in no way neglected, and a private garden in the rear contains a central lawn, where battledore, croquet, bowls, or Badminton, can be enjoyed to perfection on the smoothest of grass. Surrounding it are walks for strollers, and at the end is a beautiful skating-rink, upon which ladies and gentlemen may disport themselves.

Looking from overhead, is a terraced plateau with an orchestra space, and underneath this are recesses for seats, refreshments, and skate stores. There seems to have been nothing omitted which should gratify the eye, the palate, or the fancy in the whole of this little town; and if an aviary were only added to the fish-pond and fountain, the circle of pleasures would be complete, and every sense allotted to mankind below would find a place for its thorough enjoyment.

The chief enjoyment perhaps to be derived at the "Granville", is from the baths, for no more complete an establishment exists to our knowledge anywhere in England. For instance, there is a salt water plunge-bath of noble proportions, into which every tide can pour a fresh volume, and the contents of which can be heated from 64° to 74° with the greatest ease. There is also a complete Turkish bath, which rivals any we have seen in the East for luxuriousness, and for the complete command which is obtained over proper ventilation. There are also every kind of douches, needle-sitz, spinal, rosespray, wave, or shower, and thus each fancy can be instantly appeased. Hot baths also exist in profusion; and if one be required in which fresh seaweed has been steeped in the water, so as to release the iodine, it is furnished immediately. For local applications there are running-sitz, enema, and rectum baths; and if it be sought to subject any single limb, such as an arm or a leg, to a sustained douche, hot or cold, there is an apparatus where this can be done without necessarily undressing the rest of the body. Nor is the cold-water cure forgotten here, for Mr. Pollard will show where a wet sheet bath and mackintosh will cover one for the usual three-quarters of an hour. Then there are plain vapour-baths, sulphur-baths, and medicated vapour-baths, after which one should take a hot water immersion, and a cold shower, if the absolutism of enjoyment be sought. There are, moreover, electro-chemical baths, where, from a full shock to a gentle and graduated current, every possible application can be received. As to the other kinds of baths known to travelled science, there are lamp-baths, Russian baths, India spirit baths, and the rest of them. For the more homely visitors who prefer the plainest treatment, there are bran-baths and mustard-baths. The sun-bath and the hot sand-bath alone we missed, but doubtless they are possible.

We have been, perhaps, somewhat prolix in our description of this wonderful hotel, but we could have said far more did space or time admit. We have confined our remarks entirely to the "Granville", and have said nothing of Ramsgate or its cliffs and walks; neither need we, for they are well known. This is, however, the "west end" part of the town, sufficiently removed from the bustle of excursionists, and yet near enough the harbour to watch its ever-changing scenes. The "Granville" is thus excellently suited for every kind of visitor, the boarder or the casual; and to render it more so for the occasional guest a Granville Private Express train leaves Charing Cross every Friday at 3.45 P.M., reaching the hotel at 6 o'clock, and returning from Ramsgate at half-past eight on Monday morning. We imagine that this special arrangement will be even more appreciated than at present as an escape from metropolitan high-pressure life; and if one is to predicate anything from a glowing eulogium which appeared in *Le Soir* last December, the "Granville" will be equally valued in France as a resort for Frenchmen who wish to cultivate more intimate relationships with "perfidie Albion".

All this is due to the enterprise of Mr. Edmund F. Davis, of St. Peter's, Isle of Thanet, the gentleman who recently purchased the "Granville" property from Messrs. Coutts and Co., and we trust he will be rewarded for it. The management is in the hands of Mr. Verini, and a better one could not possibly be. To both these gentlemen we desire to render, in parting, our best thanks for permitting us to explore, without restraint, the ins and the outs of this unique structure and its surroundings.

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*(January 29 to February 10, 1877.)*

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Vidal (François-Joseph). Considérations sur les kystes hydatiques des os, in-8 de 38 pages.

Hutin (Camille). De la température dans l'hémorrhagie cérébrale et le ramollissement, in-8 de 40 pages.

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Lefebvre (Constant). De l'apoplexie spinale, in-8 de 40 pages.

Nivard (R.). De l'amputation dans la zone emphysémateuse des membres atteints de gangrène traumatique, in-4 de 40 pages.



## MISCELLANY.

A NEW METAL.—M. Prat, of Bordeaux, has communicated to the Société des Sciences Physiques et Naturelles de Bordeaux, a research on the characters and chemical properties of a metal to which he has given the name of *Lavassium*, in memory of Lavoisier. This metal is silver-white, malleable, and fusible; it forms crystallisable and colourless salts, and gives the following reactions. *Potassa*.—A hydrated white precipitate, insoluble in an excess of the precipitant. *Ammonia*.—The same precipitate, very soluble in an excess. *Alkaline carbonates*.—A white precipitate of hydrated oxide, followed by the disengagement of carbonic acid. *Ferrocyanide of potassium*.—A dirty yellow precipitate. *Hydrosulphuric acid*.—A brown colour at first, then a tawny yellow precipitate. *Alkaline sulphurets*.—A tawny yellow precipitate. *Tannin*.—A dark greenish yellow precipitate. *Iron and Zinc*.—A metallic black precipitate, ash grey, or under the form of extremely thin leaflets, having a metallic aspect, and spontaneously detaching itself from the zinc. This metal colours flame of a slightly purple blue. In the spectroscope it gives a spectrum: 1. In the indigo blue, two groups of characteristic bands; 2. In the pure green, two other more simple groups of bands, equally characteristic; 3. Finally, some blue, violet, and green bands; in all, twenty-three bands. The characteristic bands correspond with those of copper, which might indicate, M. Prat thinks, that copper perhaps contains this metal. The spectrum, the white silvery aspect, the solubility of its oxide in ammonia, the colour of the ferro-cyanide and its hydrated sulphuret, constitute a group of properties which distinguish it from all the known metals. According to M. Prat, this body is much more common than might be thought, for he has met with it in many minerals, and notably in iron pyrites. Its therapeutic action yet remains for study.

THE OLD HÔTEL-DIEU.—The authorities in charge of this most ancient hospital of Paris have received notice that they must surrender the building not later than the 13th September, as the municipality intend to rase the building before the exhibition of 1878, and to plant the ground with trees. A new bridge will be built across the Seine in the line of the Rue d'Arcole; the Rue Monge will be led up to it. The new Hôtel-Dieu, one of the ugliest and worst devised hospitals in Europe, had cost the monstrous sum of £2,000 per bed. It is thus, therefore, by far the most extravagant and wasteful hospital in Europe, and of the new hospitals probably the worst. It is one of the legacies of the Empire, under which the administration of the Paris hospitals accomplished prodigies of jobbing and mal-administration.

THE DRAGON TREE OF TENERIFFE.—The late Mr. W. J. Rideout has presented to the museum of Owens College, Manchester, a section of one of the branches of the celebrated dragon tree, of Orotava, in Teneriffe, which was blown down in a tropical gale a few years ago. This specimen is of great interest, because of the immense age of the tree to which it belonged. Humboldt, who was familiar with the tree, pronounced it to be one of the very oldest inhabitants of our planet. It was described in 1402 by a writer named Bethencourt, and his description shows that the tree underwent little change during the subsequent 450 years. When Bethencourt saw it, its stem was as decayed and hollow as when Humboldt measured its circumference and found it to be 45ft. The stem and branches are further peculiar as furnishing an example of an Endogenous tree, which nevertheless grew steadily in thickness in a way very unusual amongst Endogenous Monocotyledons.

GLASGOW LYING-IN HOSPITAL.—In the forty-second annual report of this hospital, from November 1875 to November 1876, the number of women confined in the hospital during the year amounted to 293; and at their

own homes 937 were confined. Instrumental interference was required in 7 cases out of the 293, but it is not stated of what kind; manual interference was required once. 296 children were born alive at full time out of a total number of 298, including 5 cases of twins. Five mothers died. Outside the hospital 937 women were confined, of whom 3 died. There were 946 children, including 11 cases of twins, born; of these 818 survived, thus giving an infantile mortality of 128. Instruments were used 20 times; manual interference was required 8 times.

CRANIAL MORPHOLOGY IN THE URODELOUS AMPHIBIA.—In pursuance of his deeply interesting investigations on this subject, a paper was lately read by Professor Parker before the Royal Society. He has arrived at the conclusion, that in vertebrata the notochord is universal, and that it always passes some distance into the skull. He refers to the various causes which modify the form of the vertebrate skull, and which render the study of cranial morphology so difficult, as coming into action, some in early embryonic life; whilst others, such as those which relate to specialisations of parts of the cranium and the face, the parts encircling the mouth, sense-capsules, and branchial apparatus, appear at a later date.

PLASTERED WINES.—Many buyers now in the French markets absolutely reject plastered wines. They employ the following test. A solution of chloride of barium acidulated with about a tenth part of hydrochloric acid, is added to an equal quantity of wine; if the wine be plastered, an abundant precipitate white falls, forming at the end of half an hour a layer of some thickness at the bottom of the glass; with wines either not at all or very slightly plastered, no precipitate forms.

THE Brussels correspondent of the *Pall Mall Gazette* writes: The medical men of Ghent have formed an union for the purpose of printing a black book containing, in alphabetical order, the names of persons who are in the habit of not paying the fees due for medical assistance. They have also taken a pledge not to attend such persons except in cases of immediate urgency.

WARD ON MICROSCOPY AT THE AMERICAN EXHIBITION.—Dr. Ward gives, in the January number of the *Monthly Microscopical Journal*, an interesting review of the transatlantic microscopic exhibits. Amongst continental microscopes the elaborate instruments of Nacht appear to have been well represented, whilst Plossl and Co. of Vienna supply a neat and excellent instrument with a novel movement. The English department presents the unrivalled and handsome instruments of Ross, but disapproval is expressed on account of the premature removal of the new Wenham objectives. Messrs. Beck exhibit a very complete series, which, however, is stated to have been badly displayed. A microscope by Crouch, after the continental model, with short body and horseshoe base, is quoted as evidence of the growing popularity of these instruments. Amongst American houses, that of Zentmayer of Philadelphia took off the palm for elegance and utility. A new model physician's microscope by T. H. McAlister is referred to as a charming little instrument, which, together with Wale's new student's microscope, is furnished with the Zentmayer glass stage and diaphragm used after the continental plan. It appears that E. Gundlach of Germany has lately taken to the microscopical department of the Vulcanite Optical Instrument Company at Rochester, and, by the introduction of vulcanite into the mountings, and simplification of design, is enabled to offer excellent instruments at an unprecedented low figure. It was a subject of general regret that the new objectives of Tolles were not exhibited, to verify for them the loud claims which have been put forward to their merit. Hartnack, Gremow, Powell, and Lealand were conspicuous by their absence. An instrument from Tokei, Japan, not devoid of merit, was amongst the novelties. The far-famed micro-photographs of Dr. Woodward, and the renowned instrument for micro-ruling on glass by Professor Rogers added to the interest of the collection.

# The London Medical Record.

## MERUNOWICZ AND OTHERS ON THE INFLUENCE OF CERTAIN SALTS UPON THE CARDIAC CONTRACTIONS.\*

STANNIUS (*Versuche*, 1851) first showed that the ventricle of a frog's heart is arrested in diastole, when a ligature is drawn tightly around it below the auriculo-ventricular groove. It is, however, still capable of executing a series of rhythmical contractions under the influence of external stimulation, and of continuing to do so for several hours if its internal surface be bathed with serum. But if the ligature, in addition to physiologically separating the auricle fix in it a cannula, it will execute a series of contractions without external excitation when it is filled with serum containing delphinine (Bowditch, *Arbeiten*, 1871). But the presence of this poison is not essential; for, when it is filled with pure serum, it will spontaneously begin to contract rhythmically after remaining in a state of diastole, the contractions being separated by long pauses (Luciani, *Arbeiten*, 1872). Fresh serum renders the contractions more complete and more rapid; and, if in place of serum, blood, or serum to which some red-corpuscles have been added, be used, the heart beats in a rhythmical manner without pauses, so long as the blood remains red, but, as soon as it becomes venous, pauses appear. The addition of veratrine to the blood likewise gives rise to these pauses; and a half per cent. solution of chloride of sodium retards the beats (Rossbach, *Arbeiten*, etc. 1874). Such was the state of the question when Merunowicz commenced his work. We shall here briefly state some of the details of a few of his experiments.

1. The ventricle of a frog was fixed upon a cannula and tied, and was filled with serum, to which red corpuscles had been added. Under a pressure of five millimètres of mercury it remained in diastole during thirty minutes; it then spontaneously executed a contraction which raised the mercury in the manometer ten millimètres. The contractions succeeded one another at intervals a little irregular, varying from eight to sixteen seconds; after the fourteenth contraction they became more frequent, and, in the space of eight minutes, ninety could be counted at intervals of two to nine seconds; at the same time, they were stronger, as the mercury was raised to twenty-two millimètres. After 103 contractions a retardation set in, the intervals between varying from twelve to twenty seconds, and the height of the mercury falling to twelve millimètres. The ventricle was now emptied and filled with a 0.6 per cent. solution of sodium chloride, containing red corpuscles. The contractions immediately became more frequent—about twenty-five occurring in 100 seconds—and the mercury rose to fourteen millimètres.

2. The heart prepared as above was washed with 0.6 per cent. solution of sodium chloride. An hour and a half after the ligature, the heart, which re-

mained in a state of diastole, was filled with serum. For forty-two minutes it continued in repose, and then began to beat spontaneously at unequal intervals, varying from three seconds to two minutes fifty-six seconds; the height of the mercury was thirty to thirty-four millimètres. After forty-one beats the heart stopped; and, although the serum was renewed, it did not recommence to pulsate except under external stimulation.

Four hours fifty minutes after the ligature, the heart was filled with serum, to which a few drops of delphinine solution had been added. At the end of fifty-two seconds its beats recommenced at intervals of one to six seconds, and the mercury varied from twenty-eight to twenty-four millimètres; after forty beats the heart stopped entirely.

In thirty minutes it was filled with 0.6 per cent. solution of sodium chloride containing blood. At the end of a minute commenced a series of fifty pulsations, which were effected in 108 seconds. In the minute following there were no more than two beats; but a second filling provoked a new series of 150 beats, whose mean at first was one every two seconds, and, at the end, more than two a second. The mercury fell from thirty-two to forty millimètres. The beats then stopped all at once. A third, fourth, and fifth filling produced effects closely analogous.

This experiment proves that serum without hæmoglobin is less capable of maintaining the work of the heart than a saline solution containing it; and that delphinine has no specific action in arousing the cardiac contractions, as hæmoglobin has this power to a greater degree.

The ventricle, therefore, of itself possesses the power of automatic contraction, and is not in this respect to be distinguished from the other parts of the heart where the existence of ganglia has been demonstrated. Nevertheless, there exists this difference between the heart as a whole and the isolated ventricle, that the former, even when deprived of blood, continues to beat, while the latter, even when filled with a nutritive fluid, takes some time before it commences to do so. That this does not result from the ligature, is shown by the fact that the immediate action of the ligature is to excite a tetanic contraction and an acceleration of the beats (Luciani and Merunowicz). Is it the result of slowness of diffusion in the ventricle? To verify this hypothesis, Merunowicz has made a long series of experiments, in which he modified the composition of the liquid contained in the ventricle. According to the richness of this liquid in hæmoglobin, so did he find the heart's action quicker and stronger. In general, after each fresh filling of the ventricle, the distance between the beats was represented by a number inversely proportional to that expressing their height; from which we may conclude, that the richness in nutritive principles of the liquid bathing the ventricular cavity tends to augment the excitability, while its impoverishment accelerates the discharges.

If the ventricular cavity be filled with 0.6 per cent. saline solution, the contractions are not so high as if it contained blood. Renewal of the saline solution gives a short temporary energy; but, after a time, the ventricle is exhausted and reacts no more; it is not dead, however, for the addition of a saline solution containing blood starts the contractions afresh. The action is generally accelerated by these saline solutions, sometimes to such an extent that there is not time for a complete diastole between two systoles. Each fresh filling of the ventricle up to a certain point is followed by increased frequency in the beats,

\* *Arbeiten aus der physiologischen Anstalt zu Leipzig. Revue Mensuelle de Médecine et de Chirurgie, etc.*



lasting for about half a minute; but, if the saline solution contain hæmoglobin, a retardation follows instead.

Serum of the blood being much more effectual than chloride of sodium in maintaining the contractile power of the heart, Merunowicz has studied the action of its constituent elements. In a first series of experiments he has investigated the action of the constituents of the serum not precipitated by alcohol. He finds that, when a ventricle that is exhausted by repeated fillings with solution of sodium chloride is filled instead with the *simple extract* thus obtained, its pulsations are restored, and each renewal is succeeded by quicker and more powerful pulsations. The action of this extract resembles that of serum itself in not producing an initial acceleration like solution of chloride of sodium, and this is the more remarkable, in that it is almost free from the albuminous principles present in serum. By repeated treatment with absolute alcohol, the simple extract can be freed from them entirely. This *double extract*, which contains only mineral substances, is not so powerful as the simple extract in restoring to the cardiac muscle the power it has lost; but it is in this respect much superior to the solution of sodium chloride.

Merunowicz also finds that an aqueous solution of the ash of serum reanimates, nearly as well as the serum itself, a heart almost exhausted by successive fillings with solution of chloride of sodium. A *concentrated* solution does not possess this power; but a remarkable fact is, that the solution of sodium chloride will succeed in restoring strong pulsations after the presence in the ventricle of the concentrated solution.

The addition of 0.05 per cent. of carbonate of soda to the 0.6 per cent. solution of sodium chloride will make the pulsations reappear in a heart that has been exhausted by the sodium chloride alone. The addition of potassium chloride on the contrary remains without effect; so much the more surprising, as this salt is known to act as a poison to the heart.

However incomplete may be the preceding researches, they have yet led their author to formulate some general propositions. Evidently the muscular work of the heart necessitates the decomposition of an organic substance. How, then, are we to explain the evident action of the salts upon the contractile power of the heart? Do these, as Ranke thinks, carry away with them certain products of tissue-waste that are capable of exerting an inhibitory action on the process of contraction? But if so, how are we to explain the action of chloride of sodium, which exhausts the heart proportionately to the number of times it is renewed? Or, is it preferable to suppose that the salts endowed with an action favourable to contraction, penetrate into the muscle to modify its composition, there to be decomposed, or at least to enter into some new combinations? If this notion be well founded, then mineral substances would be as indispensable as organic substances to muscular contraction.

T. CRANSTON CHARLES, M.D.

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#### VON NUSSBAUM ON SHOCK AFTER SEVERE INJURIES AND OPERATIONS; WITH A CONTRIBUTION ON ABDOMINAL SECTIONS.

AN instructive article on Shock, by Professor von Nussbaum, is contained in the *Ärztliches Intelligenz-Blatt* for March 13th.

When reflex paralysis of the heart occurs after severe laceration of peripheral nerves, the condition is defined as the shock of the injury; if with fatal result, we say that death has been caused by the shock of the injury, and necropsy is not expected to afford any explanatory phenomena. Formerly, deaths after the greater injuries and operations were attributed to shock pure and simple, in vastly greater numbers than in recent times; not because people are now more hardy than they were, but because the progress of science has enabled us to correct the errors which included deaths from shock and from other causes, now well known and distinguishable, in a common category. With Czerny, Dr. Nussbaum would refuse to attribute to shock all deaths from injuries, when during a moderate period satisfactory progress has been made and no danger has been perceptible.

The muscular tissue of the heart performs its normal functions so long as endosmose and exosmose permit a normal nutrition of the muscle-cells; and impaired function of this tissue implies a disturbance of the chemical and electrical processes of which it should be the seat.

As one cause of this disturbance, he instances the absorption of decomposing fluids in any tissue or part; especially in the peritoneal sac, the capacity of which for imbibition he discusses at length, quoting experiments by Wegner.

In cases of very rapid and complete absorption of septic peritoneal contents, death is doubtless caused by septicæmic collapse, though wrongly attributed to pure shock.

Then there is the occasional sudden death of old people after a day or two's satisfactory progress, often wrongly attributed to shock, but which he accounts for by loss of blood; considering, as he does, that hæmorrhages, not immediately fatal, are often direct cause of death after a short interval necessary to the full production of the ill effect which comes on suddenly, though the patient may previously seem well. A similar sudden fatality attends severe railway accidents and consequent amputation in even young, healthy, strong men, and is wrongly imputed to pure shock, but, in Nussbaum's experience and that of Virchow, Bergmann, Czerny, Uffelmann, Wagner, Busch, Halm, and von Buhl, may be safely attributed to fat-embolism, the effects of which are seen in severe dyspnœa, œdema of lung, and sudden death. Such calamity has been observed even in cases of simple fracture of the leg. Then comes abstraction of heat, from sudden and extensive cooling of the abdominal viscera, which has been experimentally found by Wegner to be a competent fatal agent, and which he ably reviews *in extenso*. Nussbaum gives a practical *résumé* then of the following phenomena which are to be borne in mind and combated, though not to be confounded with mere shock, to which they lead, but from which they are to be distinguished—septicæmia, senile anæmia, fat-embolism, in crushings of bones, and abdominal cooling. This forms more than half of the essay, the rest of which consists in a relation of several most successful operations performed under the antiseptic conditions laid down by Professor Lister, to whom he pays a devoted tribute of admiration, and whose system, considered by some an infatuation, he warmly eulogises; contending that the unmerited impeachment of idolatry is worth submitting to in the face of such achievements as Professor Nussbaum has himself been thereby enabled to attain.

RUSHTON PARKER.

# CLEMENT ON THE TREATMENT OF SMALL-POX BY COLD BATHS.\*

WE agree with the intention of a paper read by Dr. E. Clement before the Lyons Medical Society, and now published in pamphlet form, in which he endeavours to show that cold baths can be advantageously employed in the treatment of small-pox; but we believe that the evidence he brings forward in proof of their efficacy is open to great doubt, and can be interpreted to show that what he claims to have been the result of the baths might have resulted if no baths had been given.

He states that he acquired considerable experience of small-pox during the Franco-German war, and that, when he took charge of the patients in the Lyons small-pox epidemic of 1874, he was astonished at the malignancy of the epidemic. The facts on which he founds his conclusions as to the wonderful effects of the cold baths are as follows.

During the first month of the epidemic, eight of ten confluent cases died, whilst of twenty-five modified cases all recovered. During the following four months he had thirteen cases of modified small-pox, sixteen confluent cases, and two cases of what Curschmann calls *purpura variolosa*—of which, in all, four died.

During this second period he employed the baths, and, having had a comparatively small mortality, he would have continued the treatment only that the epidemic died out. His total mortality was, therefore, twelve of sixty-six cases, or eighteen per cent.

Taking his own figures, he lost during the first month eight of thirty-five patients, or 22.86 per cent., and during the four following months, four of thirty-one patients, or rather less than 13 per cent., a very considerable difference.

In consequence of the very high mortality referred to during the first month, Dr. Clement, was led to try another plan of treatment; and having to deal with an epidemic in which high temperature was not unusual, he employed the cold bath. We will give him the credit of having been led to this opinion by the authorities he mentions—amongst whom are Sydenham and Cullen, but we do not see what support he derives from their statements that they allowed their patients fresh air and cold drinks; Currie, who is also mentioned, of course used the cold affusion with his usual success. Hebra is said to have used the cold water treatment in small-pox, and to have found his patients recover in spite of its employment. Dr. Clement also mentions that Curschmann has used cold baths, but has not found them advantageous except in the initial and eruptive stages, and adds that Curschmann objects to their being used in the suppurative stage, on account of the impossibility of moving the patient easily.

The author states that he had the good fortune to be able to get the opinion of Dr. Brand (of Stettin) in favour of the employment of the cold baths, an opinion which might have carried some weight if Brand had had any experience of this plan of treatment in small-pox.

Dr. Clement fortifies his arguments for the use of cold baths in small-pox by stating that there is a similarity between the secondary fever of small-pox and enteric fever, as regards its *intensity, remissions, and duration*; a similarity of which we venture to doubt the existence.

Alluding to the difficulty of forming a just basis for the comparison of results, M. Clement states that there are three conditions which do not permit error, since they are external, patent to all, and mark the severity of the case; these are, 1. Confluence of eruption; 2. Hæmorrhagic and irregular forms; and 3. Thermometric indications. He mentions that delirium is of different import according to the age, excitability, and previous habits of the patient; but he omits to mention the period of disease at which it is most usually seen, and its prognostic importance according as it occurs early or late.

We agree with the author when he says that the "*Purpura variolosa*" (of German authors) is invariably fatal, but we do not agree with him when he says that *all* so-called hæmorrhagic forms denote severity of case. So far as the present London epidemic is concerned, it is by no means unusual to see patients with such "*hæmorrhagic*" eruptions recover, and even to hear of cases of hæmorrhagic small-pox recovering under this or that plan of treatment.

In regard to *thermometric indications*, the author gives sufficient evidence to prove that he was dealing with a small epidemic in which exceptionally high temperature was not unusual, and we might therefore conclude that cold bathing would be of use merely as an antipyretic.

The *period* at which the baths may be most beneficially employed is, according to Dr. Clement, at the time when suppurative fever sets in. He states, in fact, that he used the baths on account of the high fever at this period of the disease, and we cannot see why he tries to account for the apparently favourable effect of his bathing by alluding to so wild a theory as that enunciated in the latter part of his article. He there states that, after the second day of the use of the baths, the pocks become fuller and more opalescent, and he adds that the development of the pocks, and in great measure the favourable effect of the baths, may be due to osmosis between the contents of the pock and the water in the bath.

From a perusal of the cases on which he founds his conclusions, we should consider that age and condition of vaccination are of no importance as regards the termination of a case of small-pox, since he never mentions this important matter, and only four times gives the age of the eight confluent cases who died during the first month of the epidemic; and of the seven patients treated with baths, the age is given five times, and the word vaccination is mentioned twice. In each of these two cases the statement is that the patient was unvaccinated. Moreover, after reading the history of the patients treated by the baths, it may be reasonably doubted if Dr. Clement was giving baths, in some cases, during the suppurative period, and if he has not unwittingly done what Dr. Curschmann recommends, viz., bathed his patients during the eruptive stage. For instance; of case IX it is said, "On the fourth day of eruption the patient's condition has become most alarming; delirium so violent as to necessitate the use of strait-jacket. The eruption is not rising (*Elle ne lève pas*)". The italics are in the original. On the afternoon of the day on which this note was written the patient was put in a bath at 82° Fahr. (28° C.) for three-quarters of an hour. May we not fairly ask how suppuration can take place if the eruption does not rise.

It is not, perhaps, very remarkable that the author in his zeal should have forgotten to compare his results with those obtained by others on a far larger

\* *Traitement de la Variole par les Bains Froids.* Par le Dr. E. Clement, Médecin des Hôpitaux de Lyon.



scale; but we confess that it in no small degree surprises us that Dr. Clement, who in speaking before a scientific audience naturally and properly lays great weight on the importance of scientific principles in observation, should, in narrating cases of small-pox treated by a new method, have omitted to record the condition of the patients in regard to the quantity and quality of their vaccination, the amount and kind of which would necessarily modify, in a radical manner, the conclusions to be drawn from the new treatment, and the want of which renders his conclusions as to its favourable effect worthless. In those who elect to be teachers, and to initiate and conduct experiments in all probability involving the life of their fellow creatures, we have a right to demand a knowledge of the elementary facts bearing on the subject with which they happen to be dealing.

FRANK T. TWINING, M.B.

### GUBLER ON REVERBERATED OR REFLECTED PAINFUL SENSATIONS.

In a paper read before the Société de Biologie, and published in the *Gazette Médicale de Paris*, M. Gubler draws attention to certain painful sensations that are experienced at distant points when such nerve-containing tissues as skin are sharply pinched. These painful sensations he speaks of as reverberated, being, as it were, true painful echoes awakened by spontaneous or excited pain, and which manifest themselves at a distance, in parts in central nervous connection with the point of departure of the shock. The exciting pain must be acute, such as that resulting from pinching a piece of skin in a state of irritation or hyperæsthesia, or the scratching of a pimple containing an inflamed hair-follicle, or the plucking out of a hair. The painful sensations, or echoes—to adopt M. Gubler's term—show themselves regularly at determinate points, always the same for the same point of departure; that is to say, a pain excited in one region will have its echo only in one other region, often very distant. Thus a pimple in the thigh irritated by the nail will determine a secondary painful sensation towards the hypogastrium; a sharp blow of the nail on this region will have its secondary echo at the base of the chest; while a shock communicated to the thorax will come out towards the wrist, sometimes at the radial, sometimes at the ulnar border. These secondary painful sensations have the following points in common: they appear on the same side of the body as the exciting pain, they spread exclusively on the anterior or posterior surface according to the starting point of this exciting pain, and are propagated from the interior towards the exterior, from the visceral cavities towards the cutaneous covering, and from the periphery towards the centre. A pain, *e.g.*, having its origin in one of the iliac fossæ often gives rise to a secondary shock in the hypochondrium of the same side.

The comparison of these reflected pains with the acoustic phenomena of an echo is so much the more justified, in that they do not resemble the initial pain that has caused them. Let the latter be a pinch, a bruise, or a wound, and the secondary pain will in each case be almost uniform in character, of short duration, and of very limited area, just like what would be caused by the prick of a needle.

The explanation of these phenomena is still involved in difficulty. The secondary pains occur at

too great a distance to suppose them the result of the sympathy of contiguity. To account for the propagation to a distance, we must fall back upon the mechanism of reflex acts; but in the ordinary type the sensory impression carried to the centre is reflected to the periphery in the form of movement, while here it would still be a sensation. Such an occurrence would imply the possibility of a centrifugal current travelling in a sensory nerve, a fact not generally admitted by physiologists. The difficulty, however, would disappear if we regarded the reflected pain as resulting from the metamorphosis of a motor current across the peripheral nerve-cells (Remak) which may be looked upon as a sort of diffused spinal cord. These secondary pains cannot be compared to the illusory sensations experienced by persons who have had their limbs amputated, for the latter seem to set out from the peripheral expansions of the nerves, and are referred to parts of the extremities no longer present; whilst the painful echoes are arrested, as it were, midway, and manifest themselves invariably at single determinate points. Accordingly, we may suppose that the initial pain, whether excited or spontaneous, is transmitted to the nerve-centre, and that thence the shock is reflected in a sensory trunk that is connected in the spinal cord with the sensory branches of the irritated region. This shock is propagated excentrically, that is to say, in an inverse direction to the ordinary sensory current. This paradoxical current continues to travel a greater or less distance without giving rise to any sensation, or rather perception, until it is arrested, when a sort of reflex or return shock occurs, and consecutively a painful perception in the spinal centre. Naturally, the pain is felt at the point where the reflexion takes place.

T. CRANSTOUN CHARLES, M.D.

### FITZ ON RUPTURE OF THE HEALTHY OESOPHAGUS.

DR. FITZ, Assistant Professor of Pathological Anatomy in Harvard University, contributes a paper on this subject to the *American Journal of Medical Sciences*, Jan. 1877. He commences with a case which, as he says, is of exceptional interest and importance, owing to its clinical obscurity, the long duration of life in the presence of so serious an injury, its tolerably uncomplicated character, the thoroughness of its description, and the unquestioned nature of the lesion. The following are the important features of the case. The general condition of the patient, aged 31, was that of debility, due to long continued abuse of alcohol. For a year previous he had suffered from delirium tremens and obstinate gastritis. He had not complained of pain or difficulty in swallowing. On Jan. 26, while at supper, he suddenly became partially strangled by a piece of food lodging somewhere in his throat. At this time there was no difficulty of respiration. After an hour of intense anxiety, he ejected, by a concentration of his entire muscular energy, a piece of hard, tough, gristly meat; almost immediately afterwards he ejected a moderate quantity of clotted and liquid blood. Emphysema was now noticed on both sides of the neck, on the left first. Pain in the left chest was now complained of, but there was no evidence of any sudden tearing of the tissues in that region. During the next two days there were frequent vomiting (occasionally of blood), constant thirst, and emphysema extending all

over the body. On the third day the vomiting had nearly stopped. During the fourth, fifth, and sixth days, the patient passed through an ordinary attack of delirium tremens. Nourishment could be taken and retained. Tetanic spasms next set in, and the patient died of exhaustion seven-and-a-half days after the beginning of the illness. The spasms were accompanied by a sharp excruciating pain, referred to the region of the heart and stomach.

At the necropsy, the anterior mediastinum was emphysematous; the left pleural cavity was obliterated by old adhesions, which were emphysematous, and the costal pleura contained numerous bullæ distended with air. In front and to the right, at and below the bifurcation of the trachea, was found a rent in the œsophagus two inches long, passing through all its coats. Its edges were sharply defined, and gave no evidence, microscopically or otherwise, of a pre-existing ulcerative or degenerative process. From this a cavity extended into the posterior mediastinum, filled with clotted blood. The walls of the œsophagus were of normal consistence. The stomach showed appearances of chronic catarrhal gastritis; no indication of *post mortem* softening.

The author then discusses some of the above points in detail. The rupture seems to be attributed by him not to vomiting, but to violent expulsive straining, "such as might occur during defæcation or parturition." The emphysema he considers due to "a rupture of the air-passages", independently of the tear in the œsophagus, from the fact that the subpleural tissues and the pleural adhesions on the left side alone were infiltrated with air, and that there was an absence here of evidences of recent pleurisy. A double rupture must have occurred within the lung in the first place to permit the air to pass upwards and make its way beneath the costal pleura, and secondly through the pleura, that the adhesions might become emphysematous. With regard to the other symptoms, Dr. Fitz remarks that there are "scarcely any calling direct exclusive attention to the œsophagus, neither severe localised pain, nor difficulty in swallowing." He then examines the other recorded cases of this injury: of these he only accepts two, rejecting all the others, chiefly on the ground of their having been really due to *post mortem* solution of the œsophagus, a condition closely akin to that found in the stomach, as pointed out by Mr. King (*Guy's Hosp. Rep.*, 1843). The following passages, with which the paper concludes, are of interest.

"Rupture of the healthy œsophagus in a person free from disease may take place as a rare occurrence. Such ruptures are quite independent of injuries produced by foreign bodies. The rupture takes place between the bifurcation of the trachea and the diaphragm in the anterior or lateral walls of the œsophagus, and corresponds in direction with the long axis of this tube. Though it is not impossible that the tearing of the tissues may extend through the pleuræ, one or both, such an event is of very unlikely occurrence. There are two factors essential; the impaction of a foreign body in the œsophagus, and the exercise of great muscular force in the attempts to remove it. There is no good reason for considering that the act of vomiting can in any way produce this result, nor is it essential that the foreign body should remain in contact with the œsophageal wall long enough to give rise to inflammation from pressure. The fact of muscular action alone being sufficient, as the active agent, is of considerable value from a medico-legal point of view,

where the introduction of a bougie may be asserted as the cause of the rupture. Those persons in whom this lesion has been met with have been drinkers, and have suffered from various disturbances of digestion. There is no reason to suppose, however, that the excessive use of alcohol as such, or the digestive disturbances, have been special predisposing causes of any marked importance. Pain is not a very prominent early symptom. It has not been found to be of a tearing character, nor is suddenness one of its features. Nausea and vomiting are not prominent features." [These remarks as to the prominence of pain and vomiting are scarcely borne out by the cases quoted in Dr. Fitz's paper.—*Rep.*] "Liquids may be swallowed without pain. When the disease assumes a protracted course, it is essentially a gangrene of the mediastinum, combined with gangrenous pleurisy. At the outset there is little to call direct attention to the œsophagus, except the impaction of the food and the eventual hæmorrhage, and nothing to determine absolutely the fact of a complete rupture at the time of its occurrence. The diagnosis is likely to be attended with considerable difficulty, and death is the result." Finally, attention is drawn to the fact that Hamburger and Oppolzer mention auscultation of the œsophagus as a possible aid to the diagnosis.

[We cannot consider Dr. Fitz as altogether justified in rejecting most of the cases that have been recorded of this affection. To begin, the classical case of Boerhaave, which has been accepted by Oppolzer himself, does not appear to him reliable. The ground on which he rejects this and the other cases is, as we stated above, that they are probably not cases of rupture, but of cadaveric softening and solution of the œsophagus. Now, on the one hand, in nearly every one of the cases which are at all carefully recorded, there is a distinct mention of a rent in the œsophagus, almost always longitudinal, always in the lower part of the tube, and usually at its anterior part. In addition to this, mention is generally made of a gangrenous condition of the neighbouring parts, a condition which would naturally be expected in cases where both before and after death the contents of the stomach had been able to escape through a rent in the œsophagus. On turning to Mr. King's papers on the "Digestive Solution of the Œsophagus", to which Dr. Fitz attributes great importance, we do not find in one of them any mention whatever of a rent in the œsophagus, while in all of them the œsophagus is described as extensively dissolved, "its whole circumference destroyed, soft and flocculent," etc. On the other hand, if some at least of the cases (and we refer only to the more carefully recorded ones, such as Boerhaave's and Charles's), were not cases of rupture of the œsophagus, to what were the symptoms, such as a feeling of internal laceration, pain excruciating even to "agony", and rapid collapse due? Mr. King, with regard to Boerhaave's case, writes as follows. "The death I suspect to have arisen from a not very common cause, namely, extravasation into the peritoneum by perforation of the duodenum or the like." Now there is no mention of anything of the kind in the account of the *post mortem* examination, and such a condition is not likely to have escaped the author of the "Aphorisms".

Dr. Fitz considers the rupture of the œsophagus, in the few recorded cases which he admits to be of this nature, to be due to muscular straining; we hardly see how muscular force acting *ab extra* could influence, so as to rupture, one of the structures lying



in a region anatomically situated like the posterior mediastinum. For ourselves, while we admit that the actual cause of the rupture of the œsophagus does not seem to be quite clear, we would draw attention to the facts, that in two of the cases, a piece of food had lodged in the œsophagus, and that for an hour at least, during which ineffectual attempts at vomiting continued violently and ineffectually, the acid contents of the stomach must have been repeatedly propelled against the obstruction and the adjoining parts of the œsophagus. In considering the cause of the rupture, Dr. Pavy's experiments (*Guy's Hosp. Repts.* vol. ii, 3rd series), in which it has been shown, by placing the ear of a rabbit and the leg of a frog in a gastric fistula, that the gastric juice will act on living tissues, should not be forgotten. Finally, a case which appears to be one of undoubted rupture of the œsophagus, and which occurred, like the others, during violent vomiting, appears to have escaped the researches of Dr. Fitz. It is recorded in the *Lancet*, 1869, vol. ii, p. 337.—*Rep.*

W. H. A. JACOBSON.

### DETMOLD ON EXAMINATION FOR LIFE-INSURANCE.

IN the *New York Medical Record* for 1877, page 81, there is a special report of the first of a series of Lectures on Life-Insurance by Dr. William Detmold, Emeritus Professor of Clinical and Military Surgery in the College of Physicians and Surgeons, New York City. He first points out the general principles on which life-insurance is founded. Much of what he says is so good and so pertinent, that we the more regret one or two errors into which either he or the reporter has fallen. He says, for instance, that the "Carlisle" tables "have given us the most accurate calculations regarding the average duration of human life"; and then, quoting Willich's formula, he says, "To the age taken, add two-thirds of the difference between it and eighty, and you will have an almost unerring calculation of the average duration of human life".

Now, the facts are, that the "Carlisle" tables are so favourable to the insurance offices, that those who adopt them make enormous profits—the deaths being higher rates in those tables than all lives put together—and, consequently, enormously in excess of selected lives. And Willich's formula is only approximately accurate between the ages of twenty-five and seventy-five.

The lecturer then points out that many things which might justly exclude a recruit or a conscript, need not, and should not, debar a man from life-insurance. He insists, justly and eloquently, upon the necessity of strict honesty on the part of the medical examiner. "The young practitioner in small places is exposed to great temptations. Suppose, for instance, in a small town, an influential citizen, such as the mayor or the parson, fears that his health is failing; he has the first premonition of trouble about his heart, he has palpitations; and he concludes that he had better make some extra provision for his family; in short, he wishes to insure his life. Such a man's goodwill might be of great use to a young practitioner in a small town, and it is a very easy thing, and it is very tempting, to overlook a little murmur about the heart, and so secure the influence of the influential man, and with that the goodwill of

a number of respectable families. It is very tempting, but it is nothing more than downright robbery. You may be certain that the company will find out the facts in the case, for the companies investigate very thoroughly before paying the insurance, and, upon the least suspicion, your future service will be dispensed with. I can tell you a case in point. A very respectable congregation, 'all honourable men', discovered that the health of their clergyman was failing, and a council was held. Inasmuch as he had been a faithful servant in the pulpit, they concluded that it would be no more than right to provide for his family to a certain extent, and at once applied to a life-insurance company for a policy. When the doctor made his examination and rejected the applicant, the whole body of men were highly incensed because of it; they were surprised he should disapprove of 'one of the best notions in the world', and were not able to understand why he should refuse his consent to such a good scheme. But the examiner had heard a distinct murmur about the heart, and the parson died within twelve months. The congregation did not think it was robbing the company, but that it was wrong in the doctor not to pass the applicant. Strict honesty in the examiner is much more important than scientific assumptions."

Dr. Detmold urges rejection of all cases in which there is any deviation from the normal heart- or breath-sounds. We cannot quite agree with him that country surgeons cannot be expected to diagnose between disease of one valve or another in the heart. We believe that the average country practitioner in England is quite as well informed as the average town practitioner; and though we cannot speak so positively for America, we believe that localisation in town or country is by no means determined by medical knowledge, or by skill in auscultation or percussion.

Dr. Detmold goes on to deal with the family history, personal conformation, and other matters, and gives the following table of the height, weight, and circumference of the chest.

Height in feet and inches.	Weight in pounds.	Circumference of chest in inches.
5 feet 1 inch. ...	120 ...	34.06
5 " 2 " ...	125 ...	35.13
5 " 3 " ...	130 ...	35.70
5 " 4 " ...	135 ...	36.26
5 " 5 " ...	140 ...	36.83
5 " 6 " ...	143 ...	37.50
5 " 7 " ...	145 ...	38.16
5 " 8 " ...	148 ...	38.53
5 " 9 " ...	155 ...	39.10
5 " 10 " ...	160 ...	39.66
5 " 11 " ...	165 ...	40.23
6 " ...	170 ...	40.80

Now, in this table, we have represented about the normal proportion a man should have at thirty years of age, and any great deviation from this calculation is objectionable. He points out that fatigue and illness may lead to loss of weight, which may not interfere with longevity. "But a sudden loss of weight without apparent cause is decidedly objectionable and is usually the precursor of early death".

W. BATHURST WOODMAN.

# BUCK ON THE DANGER ATTENDING THE INTRODUCTION OF FLUIDS INTO THE NASAL PASSAGES.

IN the *New York Medical Record* of March 24th, 1877, Dr. Albert H. Buck records his conviction that the introduction of a fluid into the nasal passages in a sufficiently large quantity to bathe the orifice of the Eustachian tube (no matter by what method it is introduced) is not wholly free from the danger of setting up an inflammation of the middle ear. As stated by the patients themselves, the fluid is forced into the ear by the act of blowing the nose subsequently to the introduction of the fluid into the nasal passages. As long ago as 1869, Dr. Roosa of New York called attention to the fact that the use of Weber's nasal douche sometimes gives rise to serious inflammation in one or both ears. Since then Knapp and Pardoe of New York, Shaw of Boston, and Bowen of Hartford have reported a number of similar cases. In spite of these warnings, Dr. Buck has reason to believe that the nasal douche, or some substitute for it, is still widely recommended by physicians to their patients; he, therefore, considers it a duty to add his testimony to those above mentioned. He thinks the prevailing belief is, that the only danger connected with the method is during the actual use of the douche; in other words, the danger is supposed to be at an end when the pressure upon the fluid is withdrawn. Hence, the nasal douche is abandoned by many physicians, who employ the posterior nares syringe, the atomiser, or the "snuffing up" process, believing these to be quite safe methods, as little or no pressure is used. Shaw, however, has recently shown that the posterior nares syringe, and the "snuffing up" process may also give rise to ear trouble. Dr. Buck considers that the orifice of the Eustachian tube is adapted by its very shape to retain for a short time at least a drop or two of the fluid which has been made to bathe its lips. From this position the adherent drop of fluid is undoubtedly forced up into the cavity of the tympanum immediately the patient supplies the necessary *vis à tergo* by blowing his nose, which patients are instinctively led to do very soon after the employment of any of the methods mentioned above. Instantaneous spraying can simply cover the mucous membrane with an exceedingly thin layer of fluid, and consequently must be a perfectly safe proceeding; but continuous spraying, kept up for a quarter of a minute or half a minute, must introduce into the nasal passages as large a quantity of free fluid as would, for instance, the snuffing-up process. As regards the quality of the fluid used, all the solutions generally employed—simple water not excepted—seem to be more or less irritating to the mucous membrane of the middle ear, though solutions of salt appear to produce the most violent forms of otitis media. The acute attacks of inflammation of the middle ear, which are so common after bathing in salt water, are probably to be explained in the manner described above. One of the first acts of the bather or diver on reaching the shore being to clear out his nasal passages by blowing the nose forcibly. As a safe substitute, Dr. Buck recommends swabbing the nasopharyngeal mucous membrane with a twenty to forty-five grain (to the ounce) solution of nitrate of silver. He knows of no unfavourable results after this. Ten cases are subjoined, which we tabulate.

Age.	Sex.	Solution employed, or mode of procedure.	Results and termination.
40	M.	Snuffed up a solution of salt.	Severe pain in one ear almost immediately followed by acute purulent inflammation of middle ear. Rupture of membrana tympani. Otorrhœa. No permanent deafness.
19	M.	A weak solution of sulphate of zinc injected into one nostril and out through the other.	After this had been done on two or three occasions, seized with pain in one ear, lasting two days, followed by deafness and acute catarrhal inflammation of middle ear. Recovery, without suppuration.
72	M.	Snuffed up cold salt and water, and afterwards blew his nose.	Since then quite deaf in one ear, with occasional pain. Subacute otitis media catarrhalis. Lost sight of.
20	F.	Use of nasal douche; no detail as to solution.	Pain and otorrhœa in both ears. Perforation of both membrana tympani. Abundant discharge of pus.
34	M.	Nasal douche, with warm salt and water.	Next day, pain in both ears, followed by congestion of both membrana tympani, relieved by leeches and incisions.
63	M.	Snuffing up cold water. Had frequently done this, with only slight pain after.	On a recent occasion, severe pain in right ear. Swelling and bulging of right membrana tympani. Escape of bloody serum on puncture. Otorrhœa for two months.
5	M.	A warm weak solution of salt by posterior nares syringe.	Pain in both ears; both membrana tympani red, swollen, and bulging. Incisions.
36	M.	Nasal douche, with weak solution of salt for several days.	Recently, blowing his nose just after, was conscious of something entering the ear. Severe otalgia. Otorrhœa for a week.
35	M.	Snuffing up a weak solution of salt.	Blew his nose, and felt something "give way" in the right ear. Severe pain, followed by otitis media. Escape of bloody serum on incision. Recovery.
30	F.	Snuffing up a weak solution of salt.	On blowing the nose just after, felt something wrong in one or both ears. Some hours after, pain in the right ear, followed by severe inflammation of middle ear. Perforation in membrana tympani, healed on 25th day of disease.

[The reporter, though believing these cases to be rare, considers them worthy of note. Where there is already any disease of the middle ear, or perforation of the membrana tympani, he has seen unpleasant symptoms and occasionally meningitis developed after syringing with tepid water. The late Mr. Hinton told the reporter that he preferred in such cases to have a gentle stream of water poured into



the external ear, or squeezed from a clean syringe or rag, rather than allow a syringing to be done. Again, symptoms of collapse have been known to occur, and, in some cases, temporary vertigo, only from pouring brandy, eau de Cologne, or other spirituous fluids into the external meatus, when the membrana tympani was quite free from any perforation. These facts, familiar to many practical men, like those just adduced by Dr. Buck, have as yet attracted little attention from aural surgeons.—*Rep.]*

W. BATHURST WOODMAN.

### HAGEN ON THE RELATIONSHIP OF GENIUS TO INSANITY.\*

It has long been recognised that genius has a close connection with insanity, but hitherto all attempts to describe clearly the relationship of one to the other have been unsatisfactory.

In observing the motives and actions of the insane, we cannot help noticing a resemblance to those of genius. The mind of the maniac is rich in thoughts and imagination; he surprises us with sparkling witticism and bold comparisons: some patients live in a kind of ecstasy in an imaginary world, much as a poet, when thoroughly engrossed with his subject, is as it were quite shut out from the world around him.

History tells of many renowned men who have become insane. Few examples are available from ancient times, but the Roman poet Lucretius was subject to attacks of delusional insanity, and committed suicide at the age of forty-four. Later on, Torquato Tasso had frequent attacks of *melancholia agitata* accompanied by hallucinations; these latter persisted after all depression had passed off. Molière suffered from such severe attacks of "hypochondria" that they may fairly be regarded as melancholia; Swift died insane, as did also Reinhold, Lenz, and Southey. Hölderlin became demented in middle life, and Nicolaus Lenau died of "delusional insanity with paralysis". The names of six literary celebrities who died by their own hands, without having previously been recognised as insane, are given; but the author refrains from giving the names of living poets who are known to have suffered from insanity. Among naturalists, Schwammerdam and Albrecht von Haller are mentioned as having fallen into melancholia with religious delusions. The philosopher August Comte was confined for a year in the Charenton asylum: two years after his discharge, he published his work on Positive Philosophy. Of great musical composers, Donizetti and Schumann died in lunatic asylums.

Numerous instances are given in which the nearest relations of highly gifted men have been insane. The following are a few of these: The sisters of Cardinal Richelieu and Jean Jacques Rousseau were insane, Beethoven's father was a drunkard, Byron's ancestors were eccentric and phantastic, while he himself was mostly unhappy, and conformed to no regular habits of life. Schopenhauer had both an uncle and a grandmother demented.

It is remarkable that names of the greatest men the world has known are entirely absent from the above list; *e. g.*, Schiller, Göthe, Shakspeare, Dante, Haydn, Mozart, Friedrich II, Napoleon, Liebnitz, Kant, etc. On the whole, it is evident that only a small part of those who have been recognised as

geniuses in history, literature and art, have become insane, and it is quite an open question whether they do so in any larger proportion than other men. Only negative results have been yielded by the researches of Jacobi and others, as to whether there was a larger proportion of originally highly gifted individuals among the insane than in the general population. No doubt insanity is commoner among the highly educated and brain-workers than in other classes, but these must be carefully distinguished from those possessing natural genius.

But the two conditions, genius and insanity, may have much in common without their necessarily passing the one into the other with more than ordinary frequency. Genius consists essentially in originality, the talent for discovery; it may be, and often is, accompanied by a powerful memory, quick judgment, a clear understanding, and a facility for acquiring knowledge, but these latter do not of themselves constitute it. Every man is an original in that he has a distinct individuality, and looks upon the world in a manner peculiar to himself; but in many men this originality has been wiped out, or at any rate hidden to ordinary observation, by education, example, manners, or prejudice. A genius is propelled by a power within him, which is part of himself, to pursue his subject in spite of all obstacles; he is driven onward as an animal is by instinct toward the attainment of certain objects, even at the risk of sacrificing its own life. To Alexander and Napoleon continued conquest was a natural necessity. Genius is actuated rather by compulsion than by desire; it may almost, in fact, be said to be subject to continuous uncontrollable impulse. In this it is analogous to many, though not to all forms of insanity; a large number of lunatics give us the impression that they are under an instinct-like compulsion to speak and act as they do. Again, the genius who specially devotes himself to investigation and discovery, is generally subject to frequent or continuous doubts, fears, uncertainty, and dissatisfaction with himself and the world (indeed, he who is not a sceptic is unfitted to be an investigator), and in his habit of mind he resembles many melancholic patients whose thoughts are never in a state of rest, and who constantly imagine that behind the things which they know and see other matters are hidden, to the knowledge of which they are constantly striving but can never attain. Perhaps genius is, however, most strikingly mirrored in the exalted or maniacal forms of insanity, by the constant excitement, the desire for action, the happiness in some one idea, the play of the imagination by which rich and witty combinations of thought are caused, and the self-confidence or blunt boldness with which the latter are uttered, and which gives them that brilliancy and relief without which they would seem more ordinary.

But insanity differs essentially from genius in the sameness of its originality, identical delusions described in almost the same words, recurring again and again in different patients, and in the inability of the lunatic to work out any idea with diligence and perseverance; insanity lacks the achievement and fruitfulness of genius. It is necessary to bear this in mind, as Moreau has described genius, like insanity, to be *surexcitation cérébrale*, and therefore a neurosis. If both these conditions are due to an over-excitability or stimulation of the brain, one of them must be simply a more advanced stage of the other, and patients would necessarily pass through the one state before reaching the other, which we know not to be the case.

\* *Zeitschrift für Psychiatrie*. Band 33, heft 5 and 6.

Genius is an attribute of a man's immaterial self, and not of his mental faculties, which may be of a high order or otherwise, and which are only necessary instruments in giving expression to it. It is in itself nothing abnormal, but may become a cause of insanity when combined with a mental organisation not corresponding with it in power, by disturbing the harmony of the psychic processes. Genius is especially likely to cause insanity in those hereditarily predisposed to it; it has been shown that psychoses are not unfrequent in the families of highly gifted men, and it seems that hereditary taint is as common among men of genius as among other persons.

Many renowned personages suffer from various neuroses without becoming insane; some are only extremely nervous, others suffer from convulsions, visions, etc.; Cæsar, Mahomet, and Napoleon, were subject to the former, the Maid of Orleans and Pascal to the latter. The author considers that the great natural strength of these persons was sufficient to guard their higher faculties from disease; had the Maid of Orleans been reared in a city, or confined in a nunnery, she would perhaps have become insane.

CHAS. S. W. COBBOLD, M.D.

### THE LONDON FEVER HOSPITAL.

IN the report of this hospital for the year 1876, it appears that seven hundred and thirty patients were admitted, six hundred and seventy were discharged recovered, and eighty-six died, a mortality of 11.7 per cent. The majority of the admissions were cases of scarlatina, of which there were five hundred and sixteen; of these fifty died, or 9.61 per cent. The complications of this fever which were met with are of an unusually interesting nature, and appear to us to indicate that the cases are observed with great care. In forty-eight there was albuminuria with two deaths, in three laryngitis with three deaths, in three pericarditis with one death, in one peritonitis which died, in five erysipelas with two deaths, in one hæmorrhage from the mucous surfaces which died, and one acute tuberculosis, which of course ended in the same way. In respect of age, two hundred and two of the cases were under ten years, three hundred and fifty-nine were under twenty, and four hundred and ninety-eight of the whole five hundred and twenty were under thirty. Twenty-two cases only occurred after thirty. The highest mortality (26.32 per cent.) occurred under five years of age, and the lowest (2.07 per cent.) between fifteen and nineteen. Of enteric fever there were eighty-eight admissions and twelve deaths, a mortality of 13.63 per cent. This mortality is singularly low; so much so, that it would be interesting to know if it be the result of any special mode of treatment. There were seven relapses, in two of which death was the result. Perforation of the intestine occurred twice, with of course fatal results. Hæmorrhage occurred in three cases, all of which died. Peritonitis is said to have occurred in six cases, and four of these we are told recovered. This strikes us as very remarkable, and we confess to some doubt as to the accuracy of the diagnosis. In our own experience all such cases have ended fatally; and Dr. Murchison has expressed his opinion, with characteristic caution, when he says (*Continued Fevers*, page 606, 2nd edition) "When peritonitis supervenes, the case is almost hopeless, but in rare instances patients have recovered *after all the symptoms of perforation*." The italics are ours. Of typhus fever, twenty-three cases

were admitted, and of these seven died, a mortality of 28 per cent. This is unusually high, but the very small number of cases renders conclusions on the matter of little value. About sixty cases of acute disease, other than specific fever, were admitted in the course of the year, the most important of which were pulmonary affections, diphtheria, peritonitis, acute tuberculosis, variola, erysipelas, etc. In the treatment of all these cases the staff did not escape; one medical officer and one nurse contracted scarlet fever, and two nurses and one scrubber contracted typhus fever; all recovered.

A glance at the social position of the patients, as many as forty-one of whom occupied *private rooms*, and four hundred and twenty-eight of whom paid for their maintenance, and several of whom were admitted by order of sanitary authorities, will show that, apart from the Metropolitan Asylums, the London Fever Hospital has a wide and most important sphere of usefulness still before it, and one which must become wider and wider in proportion as the public become acquainted with its advantages, and in proportion as they know that treatment in an hospital for infectious diseases does not mean indiscriminate association with paupers.

ALEX. COLLIE, M.D.

### ANATOMY AND PHYSIOLOGY.

ONIMUS ON ELECTRO-CAPILLARY PHENOMENA IN THE ORGANISM.—M. Onimus seeks an explanation for a great number of physiological and therapeutic facts in electro-capillary phenomena, which he believes to be constantly going on in the organism. To comprehend clearly in what these phenomena consist, it will be necessary to refer to one or two physical experiments. If two heterogeneous liquors be separated by a very narrow fissure, or by an endosmotic membrane, electric currents will be generated: and albuminised substances (as Dr. Ord has shown) act in the same manner as membranes, and determine the production of the same electro-capillary actions. Becquerel's electro-capillary couple, in its simplest form, consists of a glass tube with a fissure in its side. In this tube is placed the solution of a metallic salt, such as cupric or argentic nitrate, and it is then plunged into an oxidisable solution, say of sodic monosulphide. The slit establishes a capillary communication between the two solutions, and an electric current is developed, which determines the rapid deposition of crystals of copper or silver on one of the faces of the slit. When a membrane separates the two fluids, the current is generated in its interstices, and its two surfaces represent the poles of a couple. If, instead of a membrane, a layer of albumen or gelatine be used to separate the fluids, a similar result ensues. Let the solutions be sodic phosphate and calcic nitrate or chloride, and a current will be originated with the formation of calcic phosphate on one side, and sodic chloride on the other. We see here an explanation of how this phosphate may be formed in the organism, and how gelatinous tissues may undergo ossification or calcification.

In the living tissues, Becquerel's electro-capillary couple is found in principle. Not only in the muscles and nerves, but in all the tissues, there exist electric currents; and it is very probable that these regulate and influence the chemical combinations and decompositions of tissue-change. The laws of osmose, which probably govern the capillary exchanges with



the tissues, are in great part the results of these electro-capillary currents, for the direction of endosmose is almost always that of the current of positive electricity.

In mineral baths, as Scoutetten has shown, there are electric phenomena produced; and Becquerel has observed that the currents are more pronounced with sodic monosulphide than with the other sulphur salts. Such *alkaline* baths determine, according to the laws of electro-capillarity, the reduction and deoxidation of the subcutaneous tissues, whilst an oxidation occurs at the surface of the epidermis. The reverse is the case with *acid* baths.

Similar phenomena are found to occur in the employment of metallic salts in medicine. Taken into the interior, they are decomposed, and the metal in a new combination is deposited on the inner surface of the membranes; applied to the exterior, double decompositions will take place as before, but the metal will remain upon the external surface. This is, perhaps, why these substances are so difficult of absorption. When potassic iodide is applied to the skin it is decomposed, the iodine penetrates to the interior, and the potash rests upon the exterior, forming there new combinations. The state of acidity or alkalinity of the sweat must, evidently, exert a great influence upon these decompositions, and upon the part of the salt absorbed, due to its transport inwards by the electric current.

An electric current passes between the white and yellow of an egg, the direction of which indicates reduction-changes in the latter, and oxidation in the former. As a general rule, when currents are furnished by organic substances, albuminised bodies assume the negative state, and, consequently, undergo oxidation.

**BARTHOLOW ON ANIMAL TEMPERATURES.**—Professor Bartholow, of Ohio, has an article on animal temperature in the *American Journal of Medical Sciences* for January 1877.

The temperature of rabbits, confined in a Czermak's support, declines sensibly. If complete immobility be secured, the rectal temperature begins at once to descend, and the fall becomes marked at the end of an hour.

The following is one of Dr. Bartholow's experiments. Rabbit, four months old, 34 ounces in weight, temperature of air 80° F., temperature of rectum 102° F. After being fastened in the support, the rectal temperature at the end of the first hour was 101.5° F.; of the second 101°; of the third 100°; of the fourth 99°. Shortly after being released, the temperature began to rise; in three hours standing as high as 103.5° F.

The same lowering of temperature occurred when pigeons were immobilised.

As immobility of the body causes a decline of temperature, it is obviously necessary to take this result into account in studying the action of antipyretic medicines. When the rabbits were fixed in the holder, and various antipyretics injected subcutaneously, the following results were obtained. Fifty minims of tincture digitalis being injected, the temperature in three hours was 97.8°; after twenty minims of tincture of aconite, the temperature in an hour was 98.5°; after five minims of tincture of veratrum viride, the temperature in an hour was 97.5°; after twenty grains of chloral, the temperature in six hours was 93°. The initial temperature of the rectum was 102° F. Atropia, which increases the heart's action and raises the arterial tension, lowers the animal temperature, if

administered in sufficient quantity to produce paralysis, and, consequently, cessation of voluntary movement.

Bartholow's inference is that any agent which produces complete muscular relaxation, whatever its mode of action may be in other respects, lowers the temperature; the reduction of temperature being most marked, the more complete the immobilisation.

By keeping the immobilised animals in a hot-air chamber (about 130° F.), the fall of temperature is prevented, and there is a rise instead—at the end of two hours equal to 1° to 2° F.

T. CRANSTOUN CHARLES, M.D.

**MALASSEZ ON THE ESTIMATION OF HÆMOGLOBIN.**—M. Malassez (*Archives de Physiologie*, Feb. 1877) briefly refers to the various methods of estimating the hæmoglobin value of the blood, which have been used up to the present. He then describes his "hémochromomètre", for which he claims the advantages of rapid and easy application, and great accuracy, combined with the fact that only one drop of blood is necessary. These points, he thinks, render the method applicable to clinical examination. The instrument consists of a wooden frame, which can be folded so as to form a thin flat case. In the centre it is pierced by two holes, placed immediately side by side. Behind one of these openings, a wedge-shaped vessel, containing a standard colour mixture, is fixed on a slide, which works up and down with a rack and pinion, so as to bring the various thicknesses of the coloured material before the hole. The colour standard is made of picrocarminate of ammonia, the amount of the picric acid and the ammonia being nicely modified, so as to give the exact hæmoglobin shade of red, and is at the same time made of such a strength that its colour corresponds accurately with a similar thickness of a hæmoglobin solution of known strength. This mixture is fixed with a little glycerine and gelatine, and then forms a clear coloured material, which, when closed in the air-tight prism, does not undergo any change. Behind the other opening is placed a small glass vessel, with parallel sides (a modified "*mélangeur Potain*"), which is filled with the diluted blood to be estimated. The thickness of the prism is carefully compared with a hæmoglobin wedge of similar dimensions and known strength, and graduated accordingly. Its exact hæmoglobin equivalent is marked on a scale, which is so brought into relation with the movements of the sliding prism, that the hæmoglobin value of the part seen can be read off at once, and thus, when the colours of the two are made to correspond, the richness of the hæmoglobin solution in question is ascertained.

**COUTY ON THE INFLUENCE OF THE ENCEPHALON ON THE MUSCLE OF ORGANIC LIFE, AND ESPECIALLY THE CARDIO-VASCULAR ORGANS.**—Considering that the results which have been obtained by the various modes of experimentation, in use up to the present, are incomplete, and difficult of interpretation, Dr. Louis Couty (*Archives de Physiologie*, December, 1876) attempts to throw light on the above subject by completely cutting off the supply of blood from various regions of the encephalon. For this purpose he finds it necessary to use a more exact method than those hitherto employed, which enables him to localise the effect, and thus to produce excitation of different departments of the brain, independently one of the other. It appears that the spores of lycopodium, injected into the vessels leading to

nerve-centres, accomplish this object to his complete satisfaction; the occlusion produced by these artificial embola being complete, and, at the same time, localised to the territory supplied by the vessel into which they are injected. For the exact method, and the variations of experimental detail, the original must be consulted. The results, however, may thus be summed up. The first effect produced by these experimental embola is excitation of the grey matter of the brain, dependent upon its deprivation of blood. When the vascular occlusion is limited to the carotid territory, a remarkable retardation of the heart's beat follows; therefore the brain (cerebral hemispheres) is an organ which moderates the heart's action. If the obstruction affect the entire of the encephalon, the slowness of the heart is accompanied by a considerable elevation of the blood-pressure; therefore the mesocephalon contains vaso-motor centres. When the encephalon and cervical part of the cord are similarly stimulated by anæmia, there occurs an increase of blood-pressure with acceleration of the heart-beat. The effects produced on the heart and on the vessels are quite distinct, not only as to the nervous organs stimulated, but also as to the conducting channels employed. The encephalon is connected with the heart by nerves which lie in the vagus trunk passing to it from the spinal nerves below the first pair. The encephalo-vascular nerves are of two distinct orders—spinal and mesocephalic; either of which may alone cause considerable elevation of arterial tension. Shortly after the stimulation of the encephalon by anæmia, paralysis sets in, and, if the cord be intact, the heart-beat is quickened, while the blood-pressure gradually falls; therefore the cord must be regarded as an accelerating centre for the heart, as well as an independent vaso-motor centre. When the nervous centres are so far paralysed that the pressure falls to zero, the heart still beats for some minutes. During this period, arrest of the respiration does not cause any elevation of blood-pressure or interference with the heart-beat, but it produces violent contraction in the intestines. From this it may be concluded that the phenomena which familiarly occur in the heart and vessels in asphyxia, are produced through the medium of the mesocephalon, while those which occur in the intestines depend only upon the neighbouring ganglia. In fact, two sets of muscles appear to be under the control of the sympathetic system; 1. Those directly in communication with the central nervous system; and (2) those completely independent of it.

PARINAUD ON THE INFLUENCE OF THE SPINAL CORD ON THE TEMPERATURE OF THE BODY.—M. Henri Parinaud (*Archives de Physiologie*, February) details a number of experiments, from which he draws the following conclusions. 1. Transverse sections of the cord, in the cervical or dorsal region, cause a fall in the central temperature, even when the temperature of the surrounding air is 28° or 30° cent. (82.4 or 86 Fahr.). 2. This fall of temperature depends upon the cooling of the paralysed parts, of which, during the entire experiment, the deep temperature remains lower than that of those parts which are still under the influence of the cord. 3. On the surface, and at the toes of the paralysed part, however, the temperature rises; but this phenomenon, which is due to the paralysis of the vaso-motor nerves, is only temporary; its constancy depending on the initial heat of the skin, and on that of the surrounding medium. The effect of section of the cord is then two-fold. By diminishing the combustion in the ana-

tomical elements it *cools*, by paralysing the vessels it *warms*. The difference between the superficial and deep temperature depends partly upon both these factors: the central parts producing less heat in a given time, and losing it more rapidly, from the greater exposure of blood at the colder surface.

MORAT AND TOUSSAINT ON THE ELECTRIC CONDITION OF CONTRACTING MUSCLE.—MM. Morat and Toussaint describe (*Archives de Physiologie*, Feb. 1877) a series of experiments—performed in M. Chauveau's laboratory—in which they investigate the electric condition of muscle, during different forms of contraction, by means of the effect it produced on the "galvanoscopic limb". The nerve-muscle preparation, which is to measure the electric condition, is fixed on the table of the myograph, beside the leg of a strong and active frog, whose muscle is to be investigated: the carefully prepared nerve of the rheoscopic leg is then brought into proper relation to the muscle inducing the contraction. The primary *inducing* contraction is brought about either by direct stimulation of the nerve, or by exciting the frog to *voluntary* movement. The lever of the galvanoscopic limb is made to record the *induced* contraction immediately under the trace drawn by the contraction of the *inducing* muscle. The induced tracing is then taken as a measure of the electric condition of the muscle during the entire period of the inducing contraction. From their results, the following conclusions arise. 1. If the inducing contraction be a single spasm, it never induces more than a single spasm. 2. If the inducing contraction be a tetanus, either of two changes may arise in the rheoscopic leg. Either (a) the fusion of the spasms entering into the composition of the tetanus may be imperfect, in which case the tetanus induces tetanus; or (b) the fusion of the component spasms may be complete, in which case the tetanus only gives rise to a single contraction. 3. During the continuous voluntary contraction of muscle, its electric condition does not undergo any oscillation. The electric phenomena, in short, behave in the same way as the mechanical phenomena of the contraction. 4. In the contraction of the cardiac muscle, the galvanoscopic leg only indicates an electric variation at the beginning of the contraction, the electric condition remaining uniform during the rest of the systole. But, because the cardiac contraction induces but one spasm, we cannot well conclude that the systole itself is but a single spasm. 5. In artificial tetanus, produced by an interrupted current, the induced contraction is variable—either single, multiple, or continuous. By quickening the stimulations, and lengthening the component spasms of the inducing tetanus, by means of fatigue, a contraction can be obtained, in which the electric variations are fused into one; and, consequently, give rise synthetically to a tetanus exactly similar to a voluntary contraction. 6. In the tetanus produced by a continuous current, the electric state of the muscle is uniform.

BURQ AND DUCOM ON THE PHYSIOLOGICAL ACTION OF COPPER AND ITS COMPOUNDS.—MM. Burq and Ducom publish (*Archives de Physiologie*, Feb. 1877) their series of experiments (18 in all) performed on dogs, from which the following conclusions may be drawn. 1. Metallic copper and its oxides, when given to dogs, mixed with albuminous, saccharine, or fatty materials, have not any injurious effect upon these animals, and that these mineral salts produce no grave symptoms even when given in doses of



eight *grammes per diem*. The dogs sometimes vomit after their food, have a little diarrhoea; but, on the whole, remain in good health, or even get fat. 2. Copper in small doses, or in the condition of verdigris, such as is found in food which has remained 24 hours in copper vessels which are not plated (*étamé*), causes none of the severe and rapid symptoms which it is generally supposed to produce in man. 3. Small doses of the soluble salts of copper are easily tolerated, but when three or four grammes *per diem* are reached, the dogs vomit after eating, refuse food, become emaciated, and sometimes die. But they may recover and enjoy perfect health. In those which took either the soluble or the insoluble forms, the metal could easily be detected in their organs after death.

RENAUT ON EOSINE AS A STAINING AGENT FOR THE CONNECTIVE TISSUES.—M. Renaut (*Archives de Physiologie*, Feb. 1877) has studied the action of this new red stain, which was recently introduced into histological research by Fisher. Under Ranvier's direction he applied it particularly to the elements of connective tissue, with satisfactory results. The eosine of commerce, which is soluble in water, is the potash salt of a non-azotised colouring principle (*éosine-primerose*) which contains bromine. It stains rapidly the cellular elements of the connective tissue, and the nuclei of epithelium, as well as the contractile substance of muscle, yellow elastic tissue, and hæmoglobin—red blood-corpuscles. By injecting a weak solution (1 to 500) into the loose areolar tissue under the skin, with a small syringe, a rosy oedema is produced, which gives beautifully stained preparations of the connective tissue cells. By a variety of methods—for which the original must be consulted—the author gets a series of results, which tend entirely to confirm Ranvier's views concerning the relation borne by the cells to the other elements of connective tissue.

GERALD F. YEO, M.D.

DURET ON THE CORRELATION BETWEEN THE DISTRIBUTION OF THE ARTERIES AND THE PHYSIOLOGICAL REGIONS OF THE BRAIN.—At the meeting of the Société de Biologie, on Jan. 6 (*Progrès Médical*, Jan. 13), M. Duret showed some drawings and injections, the aim of which was to establish the fact that there exists great correlation between the distribution of the arteries and the physiological regions of the brain. As in man, so in the dog, the cat, and the rabbit, the territory of the Sylvian artery corresponds very nearly to the situation of the voluntary motor centres described by Ferrier. It results from this fact that the brain must be divided into three great regions, having the limits of the vascular territories; the motor, intellectual, and sensory regions, answering to the Sylvian, anterior cerebral, and posterior cerebral arteries, respectively. The lobes and convolutions are only "accidents of the soil", so to speak, playing a secondary part. From this point of view M. Duret has undertaken the study of the development of the brain. He attributes a preponderating influence to the mechanical action exerted by the cranium on the encephalic vesicle at the time of formation of the folds of the hemispheres. He remarks that, the smaller the facial angle, so much the more does the fissure of Rolando in man, and the crucial fissure in animals, approach the anterior parts of the cranium. This organ has already a definite form, and is resistant when the encephalic vesicles are still thin and membranous; and, held between the opposed action of the two cranial hemi-

spheres, anterior and posterior, they fold themselves over to the most feeble side, that which is opposed to the base of the two cerebral nuclei already formed at this time; the smaller the cranial cap, the more direct its action, the more anterior are the fissure of Rolando and the crucial fissure. There is a third fact on which M. Duret insists. In man, a special artery exists for the third convolution; it is also found in all the animals whose brain has been studied, and it always occupies an analogous situation, even in those whose cerebral surface is smooth; it corresponds with the centres described by Ferrier for the movements of the lips and tongue. Pursuing this idea, M. Duret extirpated this region in three dogs, in order to see if there supervened in animals phenomena analogous to those which are observed in man, when there is a lesion of this part of the brain. Although the result is not yet final, it appears that two of the dogs lost the faculty of barking.

W. DOUGLAS HEMMING.

#### RECENT PAPERS.

The Pulse-watch: an Instrument for measuring the Human Pulse. By Dr. L. Waldenburg. (*Berliner Klinische Wochenschrift*, April 23 and 30.)  
Anatomical Contributions. By Dr. Zuckerkandl. (*Allgemeine Wiener Med. Zeitung*, April 10, 17, 24, May 1.)

#### PATHOLOGY.

SAUNDBY ON THE CAUSES OF THE HYPERTROPHY OF THE VASCULAR SYSTEM IN GRANULAR DEGENERATION OF THE KIDNEY.—In the *Edinburgh Medical Journal* for October 1876, Dr. Robert Saundby, pathologist to the General Hospital, Birmingham, discusses the pathology of the cardiac and vascular conditions in the contracted kidney. He attributes the hypertrophy of the heart, and of the muscular walls of the arterioles, to the state of increased fulness, which he assumes to exist in the granular kidney, on account of the blood being loaded with excrementitious products. Hence the heart is led to contract more forcibly, and this in time leads to hypertrophy of this organ. To quote his own words, he says, "I have shown that the walls of the vessels are exposed to an increased strain; I have shown that this strain is, probably, due to an increased fulness, the result of increased endosmotic action from the fluids taken into the alimentary canal; I have pointed out that in the individuals liable to this disease causes exist tending, on the one hand, to abnormal diminution of the whole vascular area, and on the other to inactivity of exosmotic action; I have shown that this osmotic change is the result of the altered physical condition of the circulating fluid; I have pointed out that the strain acts with intermittent force, corresponding to the impulses received from the ventricle. We have seen reasons to believe that intermittent stretchings or similar mechanical disturbances are favourable to the development of muscular tissue. Moreover, it must be obvious that all that has been said of the vessels applies equally to the heart-fulness. These must cause strain, and strain leads to increased muscular action, and muscular hypertrophy. We are led, therefore, to conclude that the hypertrophy of the muscular wall of the heart and arterioles is directly due to the increased fulness of the vascular system. Finally, let us endeavour to account for the thickening of the perivascular sheaths, and the formation of connective tissue in

other parts of the body. . . . If they perform the function of lymphatics—and this seems to be generally admitted—it is not difficult to explain their thickening and dilatation under these conditions; for the hyperæmia must lead, finally, to increased transudation of plasma (the quantity of water obtainable from the alimentary canal being practically unlimited); this excess of nutrition will produce its accustomed effects on the quiescent protoplasm of the part, the connective-tissue cells will proliferate, and new connective tissue will be formed in the perivascular sheaths, as in the neighbouring structures. The activity of the processes will lead to increased disintegration of tissue, and a proportionate increase in the excrementitious matter, which it is their function to remove. But, in the case of granular kidney, another important condition exists in the state of the blood. Fluid passing from the blood-vessels into the tissues will be liable to contain, in solution, many of the organic salts circulating in the blood, which will further tend to increase the work the lymphatics are called upon to do. In this way we can easily account for the new connective tissue said to be found in the wall of the heart, for the endo-arteritis, so frequently present, and for the degeneration of the kidneys, which is the most obvious pathological condition of all." [The reporter has quoted largely from Dr. Saundby's paper, in order that the views enunciated might not be distorted by mistakes in condensation. He confesses, however, that he does not see any material difference between the views here propounded and the opinions and arguments of Dr. George Johnson, with which the medical public have been long familiar.—*Ref.*]

JACUBASCH ON MUMMIFICATION OF THE LEFT LOWER EXTREMITY.—In the *Berliner Klinische Wochenschrift* (No. 13) for March 26, 1877, Dr. Jacubasch, assistant surgeon of the Eleventh Regiment of Uhlans, details a case of dry gangrene in a lady, aged about 80, who had been very healthy for most of her life, but had suffered for ten years from apoplectic attacks. On the 14th or 15th of January 1874, she became paralysed in her limbs on both sides, with entire loss of speech and consciousness. After a few days, these symptoms vanished; but the left leg, from the foot to the junction of the middle and lower thirds of the thigh, became cold, pulseless, and devoid of sensation, and, in the course of a few days, perfectly mummified. The heart's impulse was very feeble. There was a mitral systolic murmur; the arteries at the wrist and in the temples were rigid. A line of demarcation formed, and on the 13th of March the femur was laid so bare that it would only have required the use of a saw to remove the limbs without any loss of blood. She died, however, on the 22nd of that month. At the necropsy, both aortic and mitral valves were found to be diseased, with calcareous vegetations, yet fairly competent. There was a great amount of atheromatous degeneration in the abdominal aorta, with partial separation of the inner coat, and ulcerations. The whole of the left iliac artery was filled with a thrombus; so was the iliac vein. There were some degenerative changes in the liver and spleen, and a distended gall-bladder, to which was attached a sac formed from the mucous membrane, containing three gall-stones. The other organs were fairly healthy. There was myelo-necrosis of the femur.

W. BATHURST WOODMAN.

ELLIOT ON A CASE OF TRICELIAN HEART.—Dr. Elliot contributes to the *Journal of Anatomy*, vol.

xi, part 2, a case of univentricular or tricelcian heart. Well-marked cyanotic signs were first observed in the patient, a clerk, at three months of age, and gradually increased with age. There was dulness on percussion in the præcordial region far beyond the usual limits, the heart's action, moreover, being "nervous and thumping, with a whizzing *bruit* occasionally accompanying the systolic sound; the first and second sounds, however, were otherwise normal. His pulse was an exceedingly shabby one, and strangely variable in force, but always about 80". The patient died at the age of 19 years and 8 months; and his heart, after two months' immersion in spirits, presented the following appearances. The organ seemed large, the bulk being chiefly due to distention of the right heart with blood. The external surface, save for a small scar in front, caused by an adherence of the pericardium, was healthy. The aorta and pulmonary artery were seen to be reversed in position, the former springing from the right side of the heart, and having on each side of its origin the right and left auricles. The *ductus arteriosus* was closed. As regards the interior of the organ, the ventricular portion was one large chamber, having no trace of a septum, and the wall of it was as thick on the right as on the left side. The aortic opening was placed in the normal position of that of the pulmonary artery, and *vice versa*. The orifice of the vessel just named was small, as was the aorta itself at its origin, but the valves were normal in arrangement; the pulmonary artery, on the contrary, was constricted, being thus in contrast with the width of calibre of the trunk above, yet its diameter was twice that of the aortic orifice, admitting two fingers, while the forefinger alone sufficed to close the latter. The pulmonary valves, though thickened, were competent, their condition seeming scarcely to account for the *bruit* which during life accompanied the ventricular systole.

At the upper part of the space caused by the absence of the interventricular septum, attached between the right auriculo-ventricular orifice and that of the pulmonary artery, was a valve-like membrane, convex and bulging towards the latter aperture, and having a few *chordæ tendineæ* attached to its free border. It is this structure, probably, which, during life, played a part in the production of the *bruit*. [From its structure, position, and relation to other parts, it can be in no wise regarded as a rudiment of the interventricular septum, but to be rather valvular in nature, though not in function. See abstract by the reporter in the LONDON MEDICAL RECORD, Nov. 1876, of a monograph by Professor Rokitsansky on Malformation of the Cardiac Septa.—*Ref.*] Posterior to this structure were the bicuspid and mitral valves, and the orifices which they guard, were in quite close proximity, save for the intervention of a smooth papillary muscle. Traces only of the Eustachian valve were visible; but in the upper and posterior part of the *fossa ovalis* was an oblique opening, allowing the passage of a goose-quill. There was no other interauricular communication.

J. C. GALTON.

DE GIOVANNI ON THE PATHOGENY OF ENDARTERITIS.—In a paper in the *Annali Universali di Medicina e di Chirurgia* for February, Dr. De Giovanni endeavours to shew that endarteritis and the conditions included under the term vascular atheroma, are due to alterations of functions in the vaso-motor nerves of the part.

He cites the case of a lady who had suffered



right hemiplegia since childhood, in whom alopecia, almost complete, of the affected temple, had occurred; and whose right temporal artery had, long after all the other signs had been manifest for years, become thickened, hardened, and also visibly enlarged both in trunk and branches, to an unmistakable extent.

He further experimented on a couple of dogs, on one of which he passed a fine knife into the chest and divided the sympathetic cord through two intercostal spaces, and four days later through two other spaces. When he killed the animal, he found yellow patches on the adjacent lining of the aorta, raised, and shewing under the microscope round cells and oil-globules. The third right and fourth left ganglia were injured, and one of them (not divided in the experiment) was hyperæmic, and shewed infiltration of lymph-cells under the microscope.

In a second dog he repeated the experiment a greater number of times, and let it live longer, until starvation set in. At the *post mortem* inspection, he found atheromatous incrustation of the aortic valves and yellow patches down the thoracic aorta.

Allusion is also made to the existence of endarteritis in "*mal perforant du pied*".

RUSHTON PARKER.

CHUQUET ON ATROPHY OF PORTIONS OF THE BRAIN AFTER AMPUTATION OF THE ARM.—At the meeting of the *Société Anatomique*, November 10th, 1876 (*Progrès Médical*, Feb. 10th, 1877), M. Chuquet brought forward the following case. Auchne, æt. 30, a waiter, was admitted into the temporary hospital on Nov. 4, under M. Chuquet, with all the signs of ataxo-adynamic typhoid fever, and died on the 6th without presenting any remarkable phenomena. This man, in 1870, was a cuirassier, and received many balls at Reichshoffen, one of which broke his left arm, and necessitated amputation. Another fracture existed at the upper end of the right humerus: this limb was preserved. When the patient was brought to the hospital, a little pus flowed from a fistulous opening situated on the external part of the upper extremity of the arm. We learnt that on this side the cure had never been complete. The necropsy was in many respects remarkable. As far as the typhoid fever was concerned, the lesions were classical, and do not require attention. The arm where the amputation had been performed presented two large neuromata. The anterior one was formed by the union of the musculocutaneous, median, radial, and ulnar nerves. The brachial artery and the humeral veins, by their external coat, were joined to the mass, and the whole formed a lump as large as a small nut. Another smaller neuroma was formed by the radial on the posterior aspect.

On the other side, at the upper part of the humerus, were traces of an old fracture of the surgical neck; and there was a channel made by the ball, with an external and an internal orifice; the internal being the wider. In the cavity and around the fracture the tissue was lardaceous, and a fistula led to a small suppurating point. The ball was sought for fruitlessly for a long time, when, on cutting through the vertebral laminae, a hard body was encountered, which was the long-sought ball. It had traversed the upper extremity of the humerus, had glided along the curve of the ribs, and had lodged behind the spine among the muscles, where it had set up no action, and caused no pain.

On examining the two convolutions which form the fissure of Rolando, there was manifest atrophy of one of them. It had its seat in the superior layers of the right ascending parietal convolution, not involving the fold which unites the ascending parietal convolution with that of the superior parietal lobe. A considerable space was left between this convolution and its neighbours, and the thickness of this convolution was lessened. This reached only to a third of the neighbouring convolution, or of the corresponding convolution of the opposite side, or even of the lower part of the same convolution. The atrophy extended in length exactly two centimetres. The diminution of volume of the convolution was made evident as follows. On looking at the posterior part of the brain, placed on a level with the eye, the part appeared as if depressed. On placing a flat surface on the two convolutions next to the atrophied one, between its summit and the lower aspect of the flat surface was a space of two millimetres; while on the other side the flat surface placed on the corresponding point of the ascending parietal convolution oscillated markedly in touching one or other of the neighbouring convolutions. On measuring the size of the atrophied convolution in its upper third, it was found to be 6 millimetres. The size in the middle part was 9 millimetres.

The right ascending parietal convolution measured 9 millimetres in its upper third. There was then, in a length of two centimetres, a marked atrophy both in height and in thickness. The right paracentral lobe presented a diminution in volume, though relatively less considerable. Taken as a whole, its length was less by three millimetres than that of the paracentral lobe of the opposite side. The atrophy was most marked on the side corresponding with the parietal convolution.

GRANCHER ON TUBERCULOUS GRANULATIONS.—At the meeting of the *Société de Biologie*, Feb. 24, 1877 (*Progrès Médical*, March 3, 1877), M. Grancher made an interesting communication on the evolution of tuberculous granulations in the lung. They always develop themselves in the same manner. At first there is formed, in the sheath of the peribronchial lymphatics, a microscopic granulation, composed of lymphatic cells, which accumulate more or less round a centre. M. Grancher gives to this the name "embryonic granulation." Then, little by little, the lymphatic cells obstruct the bronchial tube, and obliterate it; there is then a deposit of epithelial cells, and we have the granulation, described by Virchow, with caseous centre, in the midst of a zone of lymphatic granulations. Later on, the lymphatic granulations which surround the caseous centre are converted into fibrous tissue—the fibrous granulation of Bayle. These three forms of granulation are not, then, the production of different morbid processes, but are the same product at different periods of its evolution. M. Grancher calls them "tuberculous granulations—embryonic, adult, and old."

W. DOUGLAS HEMMING.

DALBY ON A NOVEL FORM OF EPITHELIOMA.—Dr. W. C. Dalby (*Mo. Micros. Journal*) alludes to a small wart-like epithelial growth found attached by a broad pedicle to the prepuce. Microscopic examination revealed numerous points where the nest-like arrangement of the cells was clearly demonstrable: the peripheral part being composed of flattened, and the central of globular, epithelia. In no respect did this growth differ from ordinary epithelioma, except

in the total absence of the "cylinders" frequently found in the latter.

### RECENT PAPERS.

- The Bacteria Question. By Dr. C. Weigert. (*Berliner Klinische Wochenschrift*, April 30.)  
 On Cylindroma of the Lung. By Dr. Heschl. (*Wiener Medizin. Wochenschrift*, April 28.)  
 On a Fibroma of the Liver. By Dr. H. Chiari. (*Wiener Medizin. Wochenschrift*, April 21.)

### MEDICINE.

KLINGELHÖFFER ON A CASE OF DIAPHRAGMATIC HERNIA, WITH INCARCERATION AND PERFORATION OF THE STOMACH.—In No. 13 of the *Berliner Klinische Wochenschrift* for 1877 (March 26th), Dr. Klingelhöffer, of Frankfort-on-the-Maine, records a case of this accident in a young fellow, aged 22, who had previously enjoyed very good health, with the exception of an attack of pneumonia for six weeks in February 1876. But it appeared, on cross-questioning, that he had for some time suffered from nausea, and hiccup after meals. The present attack came on the 6th August, 1866, after a very hearty meal, which was followed by violent pain in the belly, and vomiting. He was carried home, and complained of difficulty in breathing. On examination, he was found twisting about in bed, complaining of violent pains in the pit of the stomach, the pulse somewhat quickened, extremities warm, temperature not above normal, the liver-dulness apparently normal also. The percussion-note was clear over both lungs, specially clear and tympanic in tone on the left side. No cardiac dulness could be made out, but the heart's impulse was very plain in the epigastrium. On auscultation, the cardiac sounds were heard best on the right of the sternum. Over the whole right lung was loud puerile breathing, on the left side no breath-sound, and no metallic tinkling. The intercostal spaces, clearly seen on the right side, were not so on the left. The left side felt decidedly distended. The man had swallowed a quantity of whole pepper and some coffee. These were soon vomited up. Pneumo-thorax was diagnosed, supposed to be connected with the previous attack of pneumonia. Morphia was injected (one-sixth of a grain), and more ordered in powder. After a very restless night, he died about 7 a.m. next morning, about sixteen or seventeen hours after the attack. At the *post mortem* examination it was found that the whole stomach, the spleen, a great part of the greater omentum, and about ten inches of the large intestine [descending colon] had passed into the left thorax, through a wide opening in the diaphragm. There was no trace of hernial sac; below and in front was the great omentum, then came the large intestine, then the stomach, with copious contents, as well as gas, distending it enormously, and behind this the spleen. The lung lay free, but compressed to about the size of a man's fist. In the pleural cavity a blackish, pulraceous, nasty smelling fluid, clearly extravasated from the stomach was found; and on lifting the stomach a small perforation, scarcely as large as a lentil-seed, was discovered, through which this fluid had escaped. The great omentum was found to be adherent to the opening in the diaphragm. The œsophagus was sharply bent double from its own opening, around the abnormal opening into which the stomach had been drawn. On account of

its distension the stomach had to be opened and emptied before it could be replaced: the colon had been returned into the abdomen easily. The abnormal opening was found in the muscular part of the left side of the diaphragm, about three and a quarter inches in front of the œsophageal opening, of oval shape, and about two and three-quarter inches long, and two inches wide; its posterior margin was free, the anterior adherent to the great omentum. Owing to the perforation of the stomach there was pneumothorax, from gas escaping from that organ. There was considerable emphysema of the cutaneous cellular tissue (noticed immediately after death), and also of the serous covering of the stomach. There was a smooth-edged fissure-shaped opening in the diaphragmatic pleura, but it was a little doubtful whether this was produced in the section. Owing to decomposition, it was difficult to say whether the opening in the stomach was an ulcer of very long standing or not. The history seemed to render this impossible.

VON MOSENGEIL ON A MECHANICAL TREATMENT OF ONE OF THE SEQUELÆ OF PLEURO-PNEUMONIA.—Professor von Mosengeil read a paper in the Medical Section of the Society of the Lower Rhine, in the session held at Bonn on the 15th November, 1875, with the above title, which is published in No. 48 of the *Berliner Klinische Wochenschrift* for 1876 (November 27th). The patient whose case is related is the Shakespearean reciter, Herr Linde, who was attacked, on the eve of a journey to America, at Cannstadt, by a painful subcutaneous abscess of the lower lip and jaws, etc., followed by fever, enlargement of the spleen, repeated rigors, pneumonia, and, after a while, pleurisy. The lower lobe of the left lung was chiefly affected. The fever was a severe kind of enteric fever, with diarrhoea, rose spots, etc. After partial recovery, the patient suffered greatly from dyspnoea, great breathlessness, with urgent desire to breathe. His oratorical experiences led him to attempt to relieve this by deeply drawn thoracic inspirations. Dr. von Mosengeil noticed that, when air was voluntarily and slowly breathed in, the affected lung would expand nearly as well as the other. He therefore put in practice a sort of modification of Sylvester's artificial respiration. He laid the patient on his back, with the thorax slightly raised, and folded the hands lightly, with the elbows bent nearly at right angles, so that the hands and forearm rested with their ulnar edges on the abdomen, near the navel. Then, at the commencement of inspiration, the arms were raised, and both hands brought into a prone position, so that when these were brought above the head the backs of the hands looked backwards; the arms were raised as high as possible behind the head, and then brought down again and pressed in by the doctor's hands, so as pretty strongly to compress the thorax. These manœuvres were repeated, and with such success, that after about ten or fifteen minutes all pain and dyspnoea had ceased, and both halves of the chest expanded equally well. After about half an hour the unpleasant symptoms returned, but on repeating the process next day, the relief lasted longer. Finally, the patient was so convinced of the benefits received, that he imitated the process himself. It was remarkable that even on the first occasion the arms and hands became almost bloodless during the performance—visibly and palpably so. Dr. von Mosengeil explains this by the general anæmia of the patient, and by the increased pulmonary circulation



inducing a certain deficiency of the circulation in the peripheral parts of the body. [It appears to the reporter to be dependent on the principle on which Esmarch's method is founded; and the comparative bloodlessness will, of course, depend, as Dr. Mosengeil says, on the total amount of blood in the body. This artificial respiration appears to have been highly successful in this case.—*Rep.*]

WARD ON RELIEF BY OPERATION IN A CASE OF BRIGHT'S DISEASE OF MECHANICAL ORIGIN.

—In the *New York Medical Journal* for January 1877, Dr. Samuel B. Ward, of the Albany City Hospital, records the following case. A widow lady, aged 58, suffered for twenty-five years from chronic diarrhœa, contracted in China, the bowels acting from five to ten times daily. In August 1876, a journey in hot weather aggravated this. Dr. Ward's prescriptions relieved her, but on the 14th of that month she sent for him again, on account of uncomfortable feelings in the throat, muscæ volitantes, vertigo, etc. She then said, that for some years past she had to pass urine every two hours or so, by night as well as by day. The urine only passed drop by drop. It contained one-fourth to one-fifth of albumen, with hyaline and granular casts, and its specific gravity was only 1008. On examination, the meatus urinarius was found covered with a dense membrane, only admitting an ordinary silver probe. The uterus was retroflexed and atrophied, its cervix conical. A director was substituted with some difficulty for the probe, and an incision outwards and downwards, parallel with the ramus of the pubes, was made on each side; after which a full-sized elastic catheter was passed into the bladder, every day for the first week, and every second day for ten days more. Gradual improvement to the renal symptoms followed. Albumen disappeared before the tenth day, and casts before five weeks. With the use of iron, quinine, and strychnine, her general health greatly improved. The diarrhœa disappeared, and she now sometimes needs a laxative. The urine, examined again in November, was quite free from albumen and casts, and, in the language of Dr. Ward, "all the abnormal symptoms, some of them of many years' standing, almost entirely disappeared soon after the removal of the obstruction to the flow of the urine."

W. BATHURST WOODMAN.

PEYROT ON THE INTRATHORACIC TENSION IN EFFUSIONS INTO THE PLEURA.—The author first of all points out the existence of a pulmonary elasticity, the effect of which is to draw the lung down towards the hilum; when there is an effusion into the pleura, this elasticity is not only destroyed, but it is replaced by an elasticity in the opposite direction, the consequence of which is that we get, firstly, an active expiration, *respiration par refoulement*: secondly, when the pleuritic fluid is evacuated, a dilatation of the lung.

M. Peyrot lays stress upon the intrathoracic tension, which in one case he found amount to three centimetres of mercury. The result of this is, firstly, an enlargement of the pulmonary cavity, but more especially the deformation of it; it produces a kind of *thorax oblique ovalaire*, the sternum being pushed from the side on which the effusion exists; secondly, the heart is forced on one side with a twist on its vertical axis, so that the right ventricle, which ought to be anterior, tends to become posterior; thirdly, there are formation of intracardiac clots and œdema of the inferior membranes, or even of the membranes generally.

These troublesome consequences disappear after thoracentesis, with or without aspiration. In cases of purulent effusion, cold abscesses, sanguineous collections in thickened walls, and large purulent cysts, aspiration almost always develops gas, and in this kind of pneumo-thorax we may get fatal pulmonary œdema. Tapping the pleura has not this latter inconvenience, and it is not possible for the atmospheric air within the pleura to displace the lung, for, as has been remarked, it will then exhibit a centrifugal elasticity. For the prevention of putrefaction within the pleural cavity we shall have to depend upon the skill of the surgeon.

A. SHEWEN, M.D.

CHESNET ON LATENT CANCER OF THE STOMACH.

—In an important thesis, lately published, on this subject (abstracted in *Journal de Médecine et de Chirurgie Pratiques*, April 1877), M. Chesnet, basing his conclusions on numerous observations, brings to light the fact that not only may cancer of the stomach reveal itself by no other signs than a little dyspepsia, or by a cachexia of which we cannot ascertain the cause, but that it may produce ascites like cirrhosis, anasarca like Bright's disease, that it may perfectly simulate tuberculosis, chronic bronchitis, cardiac affection, etc.

The author has divided his observations into ten categories. In the first, he deals with cases in which the malady has been absolutely latent, nothing during the life of the patient having drawn attention to the stomach, whilst the lesions found there by chance after death were much advanced. In the second category are found the cases in which the only symptom observed was dyspepsia. In the third class, uncontrollable vomiting during pregnancy led to the idea that one only had to deal with the ordinary accidents of this condition, whilst they were maintained by a cancer, probably pre-existent. In another class M. Chesnet places a case in which the patient presented, as the morbid symptom, anasarca, and died of purulent pleurisy. There was no albumen in the urine; this fact, as well as another given by M. Rendu, shows that, in cases of anasarca, accompanied by cachexia without albuminuria, we may suspect cancer of the stomach, even when there are no gastric symptoms. The ascites due to a latent cancer of the stomach, has often caused a false diagnosis, either of cirrhosis, or tuberculous peritonitis, as many cases ranged under the succeeding category show. In the form of latent cancer of the stomach, called thoracic by M. Chesnet, very different cases may occur. Thus, at first, we may suppose that there is pulmonary tuberculosis, and then that there is nothing serious in the lungs, but that the stomach is the seat of the lesion. M. Bucquoy, however, did not commit this error in a case where a patient presented most of the usual symptoms of tuberculosis, without auscultation revealing serious pulmonary lesions; basing his opinion on the cachectic state of the patient, not regarding the state of the lungs, this physician, although there were no gastric symptoms, diagnosed a cancer of the stomach, which was verified by the necropsy. In other cases, where pulmonary tubercle and cancer of the stomach co-exist, it is the last which, though the most important, escapes observation. Lastly, this cancer may have for a consequence cancerous angioleucitis of the lungs, which betrays itself by grave symptoms, as cyanosis and dyspnoea, which prevent the cancer of the stomach from being recognised. There are, also, cases in which palpitations, dyspnoea, even pericarditis by propaga-

tion, have been considered, in persons affected with cancer of the stomach, only as the expression of a primary cardiac affection.

Some patients present gradual emaciation, progressive anemia, a slow cachexia without manifest local symptoms, and differing much from the cancerous type of cachexia; in these cases, we must always think of cancer of the stomach. Lastly, in some cases the cancer is multiple, and is very manifest in other parts than the stomach; this last organ is almost always neglected in the diagnosis.

Why, then, is it that there are cancers which give rise to such slight symptoms, while others signalise their presence in so unmistakable a fashion? It is difficult to answer this question; it is, however, probable that their seat is in a part far removed from the orifices of the body; the reactional state of the subject (idiosyncrasy, age, etc.), and the more or less altered condition of the mucous membrane in the vicinity of the lesion are the principal elements of the problem. However this may be, it is established that the manifestations of latent cancer are, as local symptoms, anorexia, gastralgia, vomiting of food or glairy mucus; as general symptoms, œdema, local or general, emaciation, loss of power; and, lastly, as secondary phenomena, diarrhœa or constipation. All these symptoms, whether single or combined, when they occur in an obscure pathological condition, should induce careful examination of the stomach; and, in certain cases, would even warrant the diagnosis of cancer of that organ.

**BANNISTER ON PROGRESSIVE FACIAL HEMIATROPHY.**—Dr. H. M. Bannister (*Journal of Nervous and Mental Dis.*, Oct. 1876) gives the following facts and probabilities respecting this disease.

1. Progressive facial hemiatrophy is a neurosis. This is indicated by its limitations to one side of the face and to the regions supplied by special nerves; by implication in some cases of the sensibility, and even special senses; by merely the dystrophic character of the changes it produces in the tissues, without any indications of disease or alterations of the essential structure; by the close analogy, in some respects, with the neuralgia, attended with local hypertrophies.

2. As regards the nature of the nervous trouble, it appears, from an analysis of the symptoms in a majority of the cases reported, that the essential lesion is not in the vaso-motor system, but rather in the trophic functions of other nerves. Vaso-motor symptoms, properly speaking, are lacking in a majority of cases.

3. From the evidence afforded by a large proportion of the reported cases, it seems justifiable to suppose that the trophic functions of the fifth nerve are especially implicated. The facts that render this probable are the frequent limitations of the atrophy to the regions supplied by this nerve or its separate divisions, the analogy with the neuralgic atrophies and the occasional sensory symptoms. The lack of symptoms that would lead to the inference of implication of the facial nerve is in favour of this view, at least, as assisting in a kind of diagnosis by exclusion. The hypothesis that the atrophy depends upon alterations in the ganglia on the fifth nerve cannot be said to be very well supported by the facts in our possession as to the results of disease of these ganglia, but it may be the correct one.

4. In some cases there are evidences of positive lesions of other cranial nerves than the fifth—paralysis or irritation of the sympathetic; paralysis

of the abducens; of the auditory and glosso-pharyngeal. In some of these observations, where the disorder was apparently due to traumatic causes, syphilis, etc., the facial atrophy is, perhaps, to be considered as only one of the manifestations of the more general intracranial disease, of which these other phenomena were also symptoms. Still there are some facts that indicate an alteration of nerve nuclei in the medulla, in many of the cases, the direct cause of which is not obvious.

5. The symptoms of the disorder indicate a chronic trophic asthenia, or paralysis, rather than any irritative action. This is proven by the slow progress of the disease, its usual unirritative character, and such symptoms—the slower reparative action in wounds on the affected side.

6. That the disorder, however, is not merely one of arrest of development, is shown by the actual wasting of the tissues—the more solid ones, such as the bones, among them in many cases. In this it has a resemblance to the atrophy of old age, with which it seems to have other analogies suggestive in regard to its pathology. Cases of congenital facial atrophy that are not unfrequently met with, have not generally the progressive character of this affection, and are more properly to be reckoned as due to arrest of development.

7. There are various peculiarities of this disease, which, in the present state of our knowledge, cannot be accounted for in any way; still they serve to support the neurotic and local theory of the affection. Such is its unilateral character, the greater frequency of its occurrence in females than in males, etc.

8. Therapeutic measures have so far failed to produce lasting benefit for the most part. Two or three cases seem to have been benefited by Faradisation, and the prognosis, as regards recovery or arrest of the disease, is not altogether hopeless. If, as has been suggested as possible in one of the cases here related, it ever depends upon a reflex cause, or when it seems due to specific disease, like syphilis, the cutting off of the original irritation, or proper specific treatment, would seem to be the most promising remedial measures.

9. The disorder does not seem to involve life. It is possible, however, that, in some cases, it might extend to organs that are essential to life, especially if the nuclei of various cranial nerves are involved in the morbid process.

**JOFFROY ON HYPERTROPHIC CERVICAL PACHY-MENINGITIS.**—According to M. Joffroy (*Lyon Médical*, Feb. 11, 1877), this affection has two different clinical types; the first the rarest, in which there are only symptoms of chronic meningitis, or rather of phenomena (pains, paralyses, muscular atrophy of the upper limbs) consequent on compression of the cord by the hypertrophied dura mater; the second type, that in which there is compression or inflammation of the spinal cord, whence paralysis without atrophy of the inferior limb. M. Joffroy insists strongly on the clinical necessity of not allowing the hypertrophic cervical pachymeningitis to be absorbed, so to speak, by the element of transverse myelitis, which often complicates it. The type of hypertrophic cervical meningitis is the following. Most often, after a period of pain, the inflammation invading at first the posterior segment of the meninges, or, at the same time that there exists pain in the upper limb, if the inflammation have invaded at the time the rachidian dura mater in all its circumference, sometimes even in the absence of pain, the anterior



segment being alone taken, which is very rare, the patient affected with hypertrophic cervical pachymeningitis has his paralysed and atrophied upper limbs hanging inert by his side, whilst the lower limbs are intact, so that he can raise them, walk, and even take long walks; besides, his state is susceptible of improvement.

The transverse myelitis, which may complicate cervical pachymeningitis as a result of the propagation of the inflammation, is characterised on the contrary by paralysis, by contraction, by the absence of atrophy in the lower limbs, by paralysis of the rectum and bladder, and by bed-sores on the buttocks.

W. DOUGLAS HEMMING.

### RECENT PAPERS.

- The Relations of Pain to Weather, being a Study of the Natural History of a case of Traumatic Neuralgia. By Dr. Weir Mitchell. (*American Journal of Medical Sciences*, April.)  
 Addison's Disease, and its Relations with Anæmiasis (Essential Anæmia). By Dr. William Pepper. (*Ibid.*)  
 On the treatment of certain forms of Phthisis Pulmonalis by Rest, and the Internal Administration of Atropia. By Dr. Bartholow. (*Ibid.*)  
 An Epidemic of Typhoid Fever produced by Sewer Poisoning. By Dr. D. B. Simmons. (*Ibid.*)  
 Cholelithiasis as a Cause of Cirrhosis of the Liver. By Dr. A. von Fragsstein. (*Berliner Klinische Wochenschrift*, April 16 and 23.)  
 On an Epidemic of Scarlet Fever in 1872 and 1873. By Dr. Halvey. (*Berliner Medizin. Wochenschrift*, April 16.)  
 Dilatation and Fatty Change of the Heart from Overtraining. By Dr. Zunker. (*Berliner Klinische Wochenschrift*, April 23 and 30.)  
 A Case of Inflammation of the Tissue around the Spinal Dura Mater. By Dr. P. Lewitzky. (*Berliner Klinische Wochenschrift*, April 23.)  
 On Cheyne-Stokes Respiration. By Dr. I. Hein. (*Wiener Medizin. Wochenschrift*, April 7 and 14.)  
 Remarks on the Diagnosis, Course, and Treatment of Cancer of the Stomach. By Dr. Rühle. (*Deutsche Medizin. Wochenschrift*, April 7 and 14.)  
 On Aphasia from Fright. By Dr. H. Fischer. (*Deutsche Medizin. Wochenschrift*, April 21.)  
 The Treatment of Nasal Catarrh. By Dr. A. Hartmann. (*Ibid.*)  
 On Painful Dyspepsia. By M. Hardy. (*Gazette des Hôpitaux*, April 26.)  
 Report on Burq's Metalloscopic System. (*Gazette des Hôpitaux*, April 28.)  
 Partial Epilepsy of Syphilitic Origin. By Dr. Proust. (*La France Médicale*, April 28.)  
 On the Causes which may modify Cardiac Murmurs, especially Changes of Position. By M. Cuffer. (*Le Progrès Médical*, April 28.)  
 On Athetosis. By Dr. Bourneville. (*Ibid.*)  
 Thrombosis of the Right Heart and Abnormally Frequent Respiration. By Dr. F. Betz. (*Memorabilien*, Jahrg. xxii, Heft 4.)  
 On a Case of Simple Hemiplegia, and one of Hemiplegia with Apoplexy. By M. Dieulafoy. (*Gazette Hebdomadaire de Médecine*, April 20.)

### SURGERY.

**BILLROTH ON SPLENOTOMY.**—After making some preliminary remarks on the recorded cases of this operation, Billroth (*Wiener Med. Wochens.*, No. 5, 1877) states that the extension of our knowledge has rather confused than cleared up our comprehension of the physiologico-pathological process of leukaemia. Whether splenotomy is more dangerous in leukaemic individuals, or in persons non-affected; or, supposing the condition exists, whether it would cease after the operation, are questions which can only be settled after a wider experience, and that when the blood has been examined both before and after such observation. Billroth does not consider leukaemia to be a contra-indication to splenotomy. Apart from the pathological aspects of the subject, the method of operation does not appear to be so thoroughly established that the bringing forward of even an isolated case would be out of place; and in the present instance an unfortunate accidental hæmorrhage happened, which carried off the patient

in spite of all that could be done. The following history is given with the view of averting, if possible, a similar termination.

The patient was 45 years of age, and had 9 children; four years ago, she lost a large quantity of blood during a miscarriage. She had noticed two years ago a hard tumour in the left side of the abdomen, which gradually increased in size, and caused great pain. She grew thin, and for five weeks was troubled with a continuous vomiting. She was a middle sized, well-built, thin woman, of sanguineous temperament. On examination, she had an enormously hard spleen, an enlarged liver, and slight ascites; all other organs were normal. The relation of red corpuscles to white was as 5 to 1. Chloroform being administered, an incision was made a hand's breadth above and below the navel in the linea alba. The walls of the abdomen were very thin, and a few blood-vessels required ligature. On opening the peritoneum, a large quantity of ascitic fluid escaped, and the lower edge of an enormous spleen came immediately into the wound, also a portion of the lower edge of the liver; the omentum lay with the intestine behind the spleen: these structures were held back by large flat sponges. The spleen, which was nowhere adherent, was then slowly drawn downwards and outwards into the wound, as was also the pancreas, with the ligamentum gastro-lienale. This ligament, and the splenic vessels, were ligatured in six portions in order to prevent any flow of blood. There was, however, a little from one of the vessels, but it was stopped by another ligature. These ligatures (hempen) were next cut short off, and the cavity swabbed out with sponges, to get rid of the bloody ascitic fluid. Two large drainage-tubes were introduced, the viscera and omentum replaced, and the external wound united by means of thirteen deep and four superficial sutures, and a compress applied. The operation lasted about three-quarters of an hour; no complications occurred, and all present were agreed that splenotomy was a relatively simple operation, simpler than most ovariectomies.

The patient died four hours after the operation from an irrepressible hæmorrhage, brought on doubtless from the giving way of a ligature, during the exertion of passing a motion. A necropsy showed a large amount of clotted blood in the abdomen; and water injected into the splenic artery and vein revealed the fact that some small vessels had escaped ligature.

Billroth states that, should he have occasion to perform splenotomy again, he would include a portion of the pancreas in the ligature, since it seems evident that, owing to the increased pressure in the dilated splenic vessels, their ligature had not a sufficiently firm hold and slipped. The operation was performed antiseptically.

**PRINCE ON PALATO-PLASTY.**—In an article in the *American Practitioner*, March 1876, Prince recommends the employment of the galvanic cautery to diminish the loss of blood, and to secure facility of performance and certainty of result, and suggests the use of automatic needles, both for the introduction of the platinum wire for the cautery, and for taking the final stitches. He also offers the following interpretation of the function of the muscles in the pillars of the fauces. The division of the palato-pharyngeus and of the palato-glossus by Fergusson, was adopted on the supposition that these muscles tend to pull the two halves of the palate away from each other, but this supposition is believed to be erroneous. It is found by observation of the movements of the curtain

of the palate in halves, that the contraction of both these pairs of muscles approximates the opposite sides of the cleft, causing the two halves of the uvula, in most cases, to come into contact. This will readily be understood by recalling the manner in which the tongue is protruded by the *genio-hyo-glossi*. While the palate is stiffened by the fibres of the tensor palati, the levator palati, the *azygos uvulae*, and by a few fibres of the palato-glossus and palato-pharyngeus, the main portions of these last two muscles engage in approximating the two halves. To cut these muscles is, therefore, physiologically absurd, besides endangering their future functional perfection. Without the action of the palato-pharyngeus, the perfect articulation of the gutturals is impossible. The loss of the function of the palato-glossus would not be seriously felt in articulation.

If this reasoning is founded on correct observation, the division of these muscles must speedily go into disuse. Their division is the result of the fear of the hæmorrhage arising from the vertical incisions first made by Dieffenbach. Now that we have a safe way of making these incisions, by means of the cautery, we may dismiss this fear.

The muscular fibres of the posterior pillars are chiefly those which approximate the two sides of the palate, at the same time that the palate is drawn backward by the superior constrictor to the posterior wall of the pharynx, by which movements communication is cut off between the lower pharynx and the upper. In this act the two sides of the pharynx are approximated; and if the palate were divided vertically in the centre and again united by sutures, these muscular fibres would act with the sutures and not against them.

Again, the muscular fibres of the anterior pillars are those which approximate the two sides of the pillars at the same time that the palate is drawn forward to prevent communication between the mouth and pharynx. If, as before, we suppose the palate to be divided vertically in the centre and again brought together by sutures, the action of these muscles would be *with* the sutures and *not against* them.

It is very important for the future completeness of the function of the palate, that these four muscles should have their perfect activity. If the palato-pharyngeus be impaired in its action, the communication between the upper and the lower pharynx can never be closed. The impaired action of the muscular fibres of the anterior pillars is less important in relation to the voice, but the action is essential to some of the functions of the mouth, among which is the use of the blow-pipe. The division of these fibres, either by incision or by the heated wire, is to incur the certainty of the impairment of their power of contraction, and the risk of its complete and permanent destruction.

With regard to Sir William Fergusson's revival of Dieffenbach's operation for uniting the edges of the hard palate, it is found in the experience of the writer that openings along the alveolar border have a strong tendency to close by the process of granulation, though no such tendency exists in the median line. A knowledge of this tendency makes the operator bold in bringing the two sides of the cleft bony arch together, without fear of the large openings which he leaves alongside of the alveolar ridge. The chief caution to be exercised is to provide against diminishing the size of the isthmus too much, through which the circulation must be maintained.

DORAN ON FOREIGN BODIES IN THE TISSUES. —Mr. Alban Doran, in the *St. Bartholomew's Hospital Reports*, vol. xii, states that it is generally admitted that needles, pins, and other solid inorganic bodies may remain in the flesh, muscles, or even in the viscera of man, without setting up any of the various well-known pathological changes that might be expected under such circumstances. They generally enter the body by a wound in the integument, through which a little atmospheric air must be admitted; this, together with the presence of an apparently irritant extraneous substance, at first sight represents a somewhat serious complication. Moreover, the wound itself is of the punctured class, by no means the mildest variety of external injury, as has long been admitted by authorities and taught in educational works on surgery.

Yet the difference between theoretical prognosis and the results of practical observation is in no branch of surgery better illustrated than in this subject, since it is well known that none of the results to be expected, in the conditions above referred to, necessarily follow the impaction of certain foreign bodies in living tissues, at least when such bodies do not interfere with the functions of any important organ.

Most of the systematic works on surgery assert, in general terms, the immunity from inflammation observed in these injuries, without citing any particular case to the point; and while instances of hysteria, where the patient has inserted needles under the flesh, are recorded as a rule to illustrate the peculiar tendencies of hysterical subjects, examples of accidental impaction of similar substances are, on the other hand, generally related to illustrate not so much their effects, as the manner by which they have been removed through the skill of the surgeon. The object of the paper is, firstly, to consider the small amount of mischief which such bodies may inflict on the structures they pass through, illustrating the fact by actual cases collected for the purpose. Secondly, to demonstrate, from recorded cases, that, recognised as the above fact is, it is the exception and not the rule; in other words, needles and similar foreign bodies generally induce inflammatory swelling and subsequent suppuration; and, lastly, he makes some remarks on cases where certain sharp substances have been said to travel through the walls of the stomach or intestines and appear under the integuments, a phenomenon associated with the questions under discussion.

From the results of clinical research, Mr. Doran arrived at the following conclusions.

1. Small inorganic foreign bodies *may* remain a considerable time in the tissues, more especially in connective tissue, without exciting any kind of inflammation; and hence without causing the formation of abscess, or becoming encapsuled.

2. The above condition is nevertheless quite the exception—such small bodies exciting, as do larger ones, inflammation, almost invariably ending in the formation of abscess, or in rare cases terminating in the encapsulement of the same bodies.

3. Whilst it is admitted, on well-attested evidence, that bodies like plum-stones, ears of corn, &c., may be discharged externally from the cæcum and colon; on the other hand, satisfactory proof that articles like needles and pins have been discharged from the stomach or intestines, and travelled under the integuments far from the abdomen, is still much needed.

4. One thing is certain—namely, the fact that several cases are known where numbers of pins or



needles have been swallowed wilfully or accidentally, and have remained months or years in the stomach, exciting various serious symptoms, without one of the same bodies ever finding its way to the integument.

5. A few cases exist where it is known that pins or needles have been swallowed, and where similar bodies have been found in abscesses or swellings as near to the stomach as the under side of the left breast, affording strong presumptive evidence that they are some of the same that have been swallowed.

6. In cases where it is alleged that such bodies, after being swallowed, have travelled under the skin as far as to the extremities, there is generally strong proof of malingering, and not unfrequently absolutely no proof that any pins or needles have been swallowed at all; and when foreign bodies are found in situations remote from the stomach, others appearing in its immediate vicinity, as noticed in the last paragraph, it is reasonable to believe that the former have been placed under the skin by deception on the part of the patient, who has found from practical experience that some of the articles swallowed have appeared under the integument in the neighbourhood of the stomach. EDWARD BELLAMY.

**ZOJA ON OBTURATOR HERNIA OF THE BLADDER.**—In the *Annali Universali di Medicina e Chirurgia* for February 1877, Dr. Natale Zoja begins with a historical summary of published cases of hernia occurring through the upper part of the thyroid foramen. Of the various names, thyroideal hernia, *hernie ovulaire*, obturator hernia, and subpubic hernia, he prefers the last, adopted by Bérard.

The viscus protruded has been generally some part of the small intestine; but, though Monteggia and Levi assert that Gunz and Albinus knew of actual cystocele, Dr. Zoja has not been able to satisfy himself that any other case than his own has been already clearly established; he, therefore, considers it unique. His case occurred in 1864 in an unmarried woman, aged 79, who died of bronchial catarrh after a three days' illness, in which the symptoms were insufficient for a diagnosis of the hernia.

A *post mortem* examination was made, and the dissection is to be found in the University Museum at Pavia. Before opening the body, a hypogastric swelling was found, globular, elastic, and fluctuating. This had been felt during life, and had been supposed to be a distended bladder. A catheter passed easily into the bladder, but gave issue to only a few drops of urine. *Per vaginam* the hypogastric swelling could still be felt, and the uterus was hard, depressed, and folded back.

At this inner part of the left thigh a slight swelling could be seen under the muscles below Poupart's ligament; it felt like an enlarged gland, but was pliant and disappeared on pressure, reappearing when let alone, and becoming tense when the hypogastric tumour was pressed.

On opening the abdomen, he found an ovoid cystic tumour of the left ovary, seven inches high and five to five and a half wide and deep, containing a litre of reddish serum. The rectum lay to the right. The bladder was stretched and flattened over its front, and projected, moreover, through the upper part of the left thyroid foramen, with the obturator vessels and nerve, forming a cystocele of the size of half a walnut.

In the accompanying illustration, he figures a lump

of omentum behind the cystocele, but makes no reference to it in the text. Along the outer side of the neck of the hernia ran the obturator artery, derived in this instance from the epigastric; the protruded portion of bladder was not adherent to surrounding parts, contained a little urine, and was covered with peritoneum on its inner and lower posterior segment, which protruded like a hernial sac, while the front of the hernia was devoid of peritoneum.

**ZOJA ON A CASE OF MULTIPLE PERINEAL CALCULI.**—Dr. N. Zoja relates in the *Annali Universali di Medicina e Chirurgia* for February, the case of a young man aged 18, who, ever since childhood, had required occasional catheterism on account of retention, and who, after each operation, had usually remained for months independent of medical aid.

Dr. Zoja found a perineal tumour of the size of a fist, and with a metal catheter ascertained the presence of calculus in that situation; and, in addition, urethral stricture in front of the stone. He incised the perinæum under chloroform, and took out about a hundred calculi, of which about twenty were as large as a filbert, one only of which caused urethral obstruction. After incising the prostate through the wound, he sounded the bladder with his finger, and made sure that no stone remained anywhere in the neighbourhood. The stones were faceted. He then incised the stricture with a blunt-pointed bistoury, having found that its length was nearly half-an-inch. The case progressed uninterruptedly well, and a perfect cure resulted.

He quotes Porta, who refers to three similar cases: one of Mott's, with several dozen stones; one with twenty-seven in the practice of Chelius; and a third of Colot's, where eighty were passed in the course of three months. The writer concludes that the calculi were not of prostatic origin, as they consisted of magnesian carbonate, uric acid, and ammonio-magnesian phosphate.

**VIGANONI ON THE ELECTROLYTIC TREATMENT OF A LARGE NASO-PHARYNGEAL POLYPUS.**—The case, described in the *Annali Universali di Medicina e di Chirurgia* for February, was that of a healthy shoemaker, aged 28, who had on the right side a naso-pharyngeal tumour of firm consistence, almost sessile, and accompanied by repeated epistaxis. The epistaxis had been noticed two years, and the tumour about nine months, when it was removed by the late Dr. Antonietti at the hospital of Monza, by the use of an *écraseur*. The size of the growth was that of a small hen's egg, and it was supposed to be of a fibrous composition.

After a few months recurrence began, and, one year and three-quarters after the first operation, the first electrolytic sitting took place (Sept. 1875). Two steel needles attached to the negative pole were put into the tumour from the mouth; while a silver one was passed into it through the nose attached to the positive pole. A zinc and copper battery of twenty-one cells, with sulphate of copper solution, was used. Six sittings, of a quarter of an hour each, occurred at intervals of three months, six weeks, seventeen days, a fortnight, and a month, respectively. A little diminution took place; but the man left the hospital in three months, thinking his case hopeless, and wishing to die at home. However, in August 1876, the growth had so far diminished in size as to be insignificant. Recurrence again began in the following October, and the growth spread into the

right nasal fossa, besides enlarging in its pharyngeal portion. Hæmorrhages, alteration of voice, and great dejection of the patient's strength again took place, till at last he was admitted into the Ospedale Maggiore at Milan, under the care of Professor Albertini, who successfully removed the tumour, for the third time, with the aid of the galvanic cautery.

A special process was devised, the publication of which the writer expects at the hands of its employer at a future date.

RUSHTON PARKER.

**SCHWARTZ ON THE OPEN TREATMENT OF WOUNDS.**—Dr. Ed. Schwartz (*Revue Mensuelle de Médecine et de Chirurgie*, March 1877) discusses the advantages of the old and simple open treatment of wounds, as opposed to the methods followed by Guérin and Lister. Vincenz Von Kern first systematically followed this plan, which, in his hands, especially consisted in freely exposing the wounded surfaces to the air, and simply keeping the edges of the wound in position by means of sponges.

As now practised, the method, *e.g.*, in amputations, consists not only in exposing the wounded surfaces freely to the air, without the use of charpie or compresses, but also in carefully keeping the stump as much as possible in one position by laying it on a cushion covered with macintosh, and so placing it that the discharges can easily escape and find their way into a vessel fixed at the side of the cushion. Sutures are sometimes used with the view of obtaining primary union; but generally the healing process is slow, and takes place by the formation of granulation tissue, and this is, in most instances, accompanied by traumatic fever. There may be, however, cases with local inflammation, without any apparent general disturbance.

Wounds thus freely exposed to the air, when kept for some time in one position, and so placed that the discharges easily escape, are said to succeed as well as wounds treated by the other methods; and this opinion is supported by some statistics mentioned at the end of the paper.

**GIBBS AND STACY ON MEASUREMENT OF THE LIMBS.**—Dr. Gibbs, surgeon U.S. Navy (*American Journal of the Medical Sciences*, Jan. 1877), describes a new apparatus for measuring the inequalities of the length of the legs. It consists of a board, five feet long and twenty-two inches wide, with a longitudinal slit, two inches wide, in the middle line, extending from a point twelve inches from the upper end. Into the lower part of this groove a sliding piece of wood is fitted, having another piece of wood attached to it at right angles. In the upper part of the groove, there is a second movable block, to which a piece of wood, six inches long, seven inches deep, and one inch thick, is fixed in an upright position. Also, near the upper part of the board, two sheet-iron hooks are fastened, by means of "wood screws" at their lower end, and to these hooks or iron bars blocks of wood are firmly fixed. Both blocks and hooks can be moved so as to form a circle, the wood screws serving as a pivot. The perpendicular edges of the blocks come into contact with the iliac crests as the patient lies in the horizontal position on the board; and, each being exactly the same distance from the middle line, and from the end of the board, the point at which the circles they form cut each other is equidistant from the pivotal screws round which they move; hence, when the patient sits on the board, so that the iliac crests are about six inches from its upper end, if the

blocks be adjusted so as to press against opposite points of the iliac crests, the pelvis must be at right angles to the long axis of the board. If, when the feet are placed equidistant from the middle line, and the lower block is adjusted, both heels do not rest on the block, there must be some inequality in the length of the legs, which can be easily and accurately measured.

Dr. Stacy, assistant surgeon to the Orthopædic Hospital, Philadelphia, also describes, in the same journal, an apparatus for estimating shortening of the lower extremities. It consists of a frame, composed of three parallel steel bars, each three feet long, united at their ends by cross bars nine inches long. From each side of the frame three arms extend perpendicularly downwards in the position of legs, capable of being moved towards or away from the median line, or from each other, so that they can be adjusted in order to grasp the patient tightly under the arm-pits, at the hips, and near the knees. From the middle of the lower end of the frame a hinged bar extends between the legs of the patient. Over this a hollow graduated bar runs, into each side of which an angular steel slip is fitted, which can be moved for a short distance along a button, and fixed at any point by the screw forming the top of the button. The short arms of these angular pieces project at right angles to the centre bar, and, when the patient is in position, are fixed exactly opposite the internal malleoli. If there be shortening, the amount can be at once determined by reading off the difference between the two slips, as indicated by the graduated scale on the central bar. One advantage of this apparatus is that it can be applied without moving the patient, or undoing the bandages and other appliances used.

J. C. EWART, M.B.

#### RECENT PAPERS.

- On a Case of Internal Urethrotomy. By Dr. Leon. (*Bulletin Général de Thérapeutique*, April 15.)  
 Case of Lumbar Colotomy. By M. Guyot. (*Lyon Médical*, April 15.)  
 Croup and Tracheotomy in Geneva. By Dr. Revillod. (*L'Union Médicale*, April 19.)  
 Practical Points in the Electrolytic Treatment of Cystic and Fibroid Tumours. By Dr. G. M. Beard. (*New York Medical Record*, March 17.)  
 Case of Section of the Median and Ulnar Nerves. By Dr. J. J. Putnam. (*Boston Medical and Surgical Journal*, March 22.)  
 The Open Treatment of Wounds after Osteoplastic Amputations. By Dr. Dittel. (*Wiener Medizin. Wochenschrift*, April 21.)  
 On the Causes of Dyspnoea in Cases of Suffocative Bronchocele, and on the Surgical Treatment most advisable. By Mr. Lennox Browne. (*American Journal of Medical Sciences*, April.)  
 Simultaneous Ligation of the Carotid and Subclavian Arteries for Aneurism of the Arteria Innominata. By Dr. Johnson Eliot. (*Ibid.*)  
 Axillary Aneurism; Ligation of the Right Subclavian Artery; Death from Hæmorrhage. By Dr. R. J. Farquharson. (*Ibid.*)  
 Amputation at the Hip-Joint: Successful Result. By Dr. Townshend. (*Ibid.*)  
 Remarks on Hypertrophy of Turbinate Corpora Cavernosa. By Dr. Beverley Robinson. (*Ibid.*)  
 Contributions to the Study of some Tumours of Unusual Locality. By Drs. Tizzoni and Parona. (*Annali Universali di Medicina e Chirurgia*, March.)  
 Extraordinary Hypertrophy of the Lower Jaw. By Dr. Vittadini. (*Ibid.*)  
 Necrosed Nasal Bones Swallowed and arrested in the Oesophagus. By Dr. Max Langenbeck. (*Memorabilien*, Jahrg. xxii, Heft 1.)  
 Colitis and Intussusception. By Dr. Schwab. (*Ibid.*)  
 A rare Disease of the Tongue. By Dr. K. Franz. (*Ibid.*)  
 Clinical Study on Osteosarcoma of the Limbs. By G. Poinso. (*La Province Médicale*, April 25.)  
 Subspinous Dislocation of the Outer End of the Clavicle. By M. P. Reynier. (*La France Médicale*, April 25.)  
 Congenital Fistula of the Neck consecutive on the opening of a Branchial Cyst. By M. S. Duplay. (*Le Progrès Médical*, April 28.)



## MATERIA MEDICA AND THERAPEUTICS.

KRULL ON THE TREATMENT OF CATARRHAL JAUNDICE BY LARGE INJECTIONS OF WATER AT LOW TEMPERATURES.—Dr. Edward Krull, of Güstrow, in Mecklenburg, writes to the *Berliner Klinische Wochenschrift*, of March 19, 1877 (No. 12), a strong recommendation of a novel plan of treatment of catarrhal jaundice. He was led to try this plan by the slowness and inefficiency of most of the customary modes of treatment. He injects, by means of an irrigator, and slowly, between 35 and 70 ounces of water, at about 12° Reaumur (or 59° Fahrenheit). On repeating the injections, the temperature is raised by degrees to 18° R. (= 72.5° F.) The quantity is regulated by the ability of the patients to bear it. He encourages them to retain the fluid as long as possible. This injection, by means of an irrigator, is done daily; but it is rare, he says, to find more than seven injections necessary. In the majority of his cases there was a reappearance of bile in the stools after the second injection. Some of his patients had suffered a long time—one of them nearly one year and a half. This plan almost immediately relieves the gastric sufferings and dyspepsia of the patients, and brings back the appetite. He attributes the improvement and cure to a reflex action on the biliary passages, gall-bladder, and liver, brought about by the increased peristaltic action of the bowels. [The reporter has found the use of frequent large clysters, combined with warm baths, of the greatest utility in catarrhal jaundice; he believes that the use of the irrigators is likely to be a great improvement on this plan.—*Rep.*]

BARR ON THE EFFECTS OF DIET, AND VARIOUS THERAPEUTIC AGENTS, ON THE AMOUNT OF SUGAR EXCRETED IN CASES OF DIABETES MELLITUS.—The *Glasgow Medical Journal*, for October 1876, contains the first of a series of cases of diabetes mellitus, by Dr. James Barr, late house-surgeon of the Northern Hospital, Liverpool. [As there are short clinical histories, and accounts of *post mortem* examinations, together with a record of diet and medical treatment, whilst, at the same time, the quantity of urine passed, and its specific gravity, and the quantity of sugar present, determined by both Robert's and Fehling's methods, are given, these records promise to be very valuable. One thing very much mars the symmetry of these tables. Whilst the sugar passed is estimated in *grains* by Fehling's method, it is given in *grammes* under the heading of Robert's process. This was, perhaps, done to enable Continental readers to appreciate the effects of the treatment and remedies on the glycosuria. But it deters all but expert calculators from comparing the two methods as to accuracy, &c.; and, to our way of thinking, the gain, even to foreigners, is but trifling; for, when the figures to be compared are all of one kind, it is easy enough to compare them, whether grains or grammes.]

In the first case, whilst the sugar increased greatly with amylaceous diet, and decreased with a restricted diet, it was by no means clear that the patient was improved by the restrictions. Codeia and bromide of potassium appeared to lessen the sugar; but other factors were, probably, concerned in both cases. This first case was of a dock-labourer, aged 35, whose illness dated about nine months before admission

to hospital. He died with phthisical symptoms. Both recent and old caseous pneumonia were found in the lungs, and numerous large perivascular spaces were found, by microscopic examination, in both the pons Variolii and medulla, with much thickening of the meninges of the brain, and atrophy of the convolutions. The kidneys were undergoing fatty degeneration. The second patient, a ship's carpenter, aged 27, had been intemperate till three years before. His mother was said to have died of "cancer in the stomach", and one brother of phthisis. He also had been ill nine months before admission to hospital. In his case, also, the effects of restricted diet in diminishing the sugar, and *vice versa* of a non-restricted diet, were very evident. Strychnia, codeia, and bromide of potassium did him no good, and seemed to augment the sugar. Quinine and strychnia together appeared to be beneficial. As before, a restricted diet appeared to be injurious to the patient. This is often found in hospital, even more than in private practice; possibly because in hospital there is less variety of food. [We must refer to the original for the tables and details, but we have taken the trouble to calculate the relations between the results by Fehling's test, and those by Dr. Robert's method, which, as our readers know, is the following. Every degree of specific gravity lost by fermentation equals 1 grain of sugar per ounce, or 0.23 per centime, in grains.—*Rep.*]

Table showing the Comparative Results of Fehling's Test, and Dr. Robert's Method of Estimating Sugar, with the Specific Gravity and Quantity of the Urine passed, and the Quantity of Fluids injected.

Mean quantity of fluids drank, in ounces.	Mean quantity of urine passed, in ounces.	Specific gravity of urine.	Sugar, in grains.	
			By Fehling's test.	By Dr. Robert's method.
*220	221	1040	7531	9315
*190	183	1040	6683	7864
180	140	1040	4765	4743
*120	90	1036	2297	2628
160	187	1038	5730	5773
160	160	1039	4815	4781
160	162	1037	4592	4572
160	136	1039	4112	4130
140	Not stated.	1040	Not stated.	9005
160	187	1038	5730	5773
160	127	1039	3915	3946
160	147	1038	4686	4650
160	141	1040	4650	4607
160	143	1040	4773	4696
160	146	1038	4313	4355
*120	85	1033	1617	1475
Not stated.	290	1037	10,257	Not stated.
"	118	1036	3409	3445
"	219	1034	6341	6409
"	151	1035	4226	4154
"	160	1034	4527	4507
"	159	1032	4752	4772
"	164	1032	4720	4752
"	159	1031	4446	4394
"	146	1030	3978	4030
"	139	1030	3835	Not stated.
"	151	1031	4100	4157

[It will thus be seen that, with the exception of the instances marked with an asterisk, Dr. Robert's method gave the quantity of sugar present exactly as Fehling's test for the first two places, or so nearly so as to be practically identical. It is possible that the hundreds, as well as the thousands, would have been

more alike had the calculator used the correct decimal figures, instead of taking 15.5 grains to represent the gramme.

We may, therefore, consider these tables as a further confirmation of the practical accuracy of Dr. Roberts' method.—*Rep.*]

In both these cases of diabetes, the mean daily temperature was subnormal; although, in the second, it once or twice reached 99.1° F. in the morning, and, on one occasion, was as much as 100° F. in the evening. In this (latter) case there were cheesy deposits in the lungs, small abscesses in the liver and kidneys, and spleen, serous effusion in the arachnoid cavity and ventricles of the brain, and small vascular vegetations like the villi of the choroid plexus on each side of the fourth ventricle, lying on the upper and posterior portion of each crus cerebelli, and adhering to the roof of the ventricle. Microscopic examination of the pons and medulla revealed many large perivascular spaces.

**HARDENHEWER ON THE THEORY OF LEAD-POISONING, AND ON THE EFFECTS OF CHLORIDE OF PILOCARPIN ON THE PULSE.**—Dr. Ernst Hardenhewer, of Cologne, has been making experiments with jaborandi and its active principle, in Dr. F. Riegel's wards. He communicates the results of some of these, with sphygmographic tracings, to the *Berliner Klinische Wochenschrift* of March 5 (No. 10 for 1877). The first part of his paper discusses various theories of the action of lead as a poison. The second part gives the tracings of the pulses of patients suffering from plumbism, to whom chloride of pilocarpin had been administered. Professor Riegel was at once struck by the contrast between the pulse-tracings in bad cases of plumbism, and those taken whilst under the action of pilocarpin. It was at his suggestion that Hardenhewer undertook the experiments mentioned above. They tend to confirm the theory of lead-poisoning, enunciated by Dr. A. Frank in the *Deutsches Archiv für Klinische Medizin*, Band xvj, Heft 3 and 4. Frank deduced, from a great number of sphygmographic tracings, the following characters of the pulse in lead-colic. 1. The descending line of the pulse-tracing is very much lengthened and protracted. 2. The elasticity—or recoil—elevation is strongly developed. 3. The elevation, due to the recoil or back-stroke, is relatively small. 4. The secondary ascent approximates closely to the summit or vertex of the curve. 5. In well-marked cases of lead-poisoning, there is a peculiar hollow top or crater-like summit to the pulse-tracing formed by two points or apices set closely together. [Thus, the pulse-curve consists of—1, a straight up-stroke; 2, a very slight curved down-stroke, ending in, 3, a secondary rise to nearly the same height as before; and, 4, then a descent, with the customary aortic notch; 5, a slight secondary, or, rather, tertiary elevation; and, 6, a descending line, which may or may not be slightly interrupted by another slight ascent and subsequent downfall—after which there is the up-stroke (No. 1), and the rest of the curve as before—and so on]. Frank explains this by increased vascular tension, induced by the lead-poison (*loc. cit.*, p. 433). Experiments with nitrate of amyl appear to confirm this, though the effects of this remedy are very transient. Although Mannkopf (No. 51, for 1876, of the *Berliner Med. Wochenschrift*) appears to deny this, one of his own cases may be quoted in confirmation. The pulse-tracings, given by Hardenhewer in the paper we are quoting, are as follows. No. 1 is a pulse-tracing immediately before the injection

of pilocarpin. It shows the characteristic features of the pulse in lead-colic, as described above. No. 2 is the same pulse, thirteen minutes after the injection. It shows greatly decreased arterial tension. No. 3 is another tracing, taken thirty-three minutes after the injection, in the same case. Here there is still less vascular tension (spanning). Almost all traces of the double summit have vanished from this pulse curve. Simultaneously with this decrease of the vascular tension, the pain decreased; and, when the effect of the pilocarpin vanished, the pain returned again. The tracing, No. 4, shows the characters of the pulse nine hours after the injection of the pilocarpin. The tracing is again characteristic of lead-colic, and again shows the double crater-like summit. The relief from the pain was so marked that one patient requested to have the morning injection repeated at night, that, being free from pain, he might have a chance of sleep. Neither Dr. Riegel nor Hardenhewer proposes the general use of either nitrite of amyl, or of jaborandi, or chloride of pilocarpin, in lead-poisoning. And they reserve further comments and theorising to some future occasion—believing that this effect of the active principle of jaborandi on the pulse in lead-colic is sufficiently interesting to deserve early mention. The quantity of chloride of pilocarpin used is not stated.

**PETERSEN ON SUBCUTANEOUS INJECTION OF SALICYLIC ACID IN ERYSIPELAS.**—Professor Ferdinand Petersen, of Kiel, states, in a postscript to a communication of his in the *Deutsche Medicinische Wochenschrift* for January 13th, 1876, that he has on three occasions cut short the progress of erysipelas by injecting a gramme (about 15 minims) of a concentrated solution of salicylic acid under the healthy skin surrounding the affected part. He has made several such injections at the same time in each of the three cases. Whether the happy result was due to the means employed, he will not dogmatically decide. It might be worth trying in other cases of erysipelas. W. B. WOODMAN.

**FISCHER ON THE HYPNOTIC ACTION OF LACTIC ACID.**—Fischer (*Zeitschrift für Psychiatrie*, Band 33, Heft 5 and 6) says that lactic acid was first recommended as a hypnotic by Preyer, in accordance with his theory that sleep is normally caused by the presence in the blood of substances which are formed during great mental or bodily exertion; among these substances, lactic acid takes a foremost place. His experiments were made with lactate of soda, and yielded positive results; not only did sleep follow after the ingestion of this drug, but it was also induced when sugar, milk, or other substances favourable to the formation of lactic acid in considerable quantities were present in the intestine. Meyer first administered lactate of soda by subcutaneous injection; he found that it caused much local irritation, had no hypnotic action, and was useless for the relief of local pain. He then tried the internal administration first of lactate of soda and then of the pure acid, and found that both had a soothing and hypnotic effect, but caused some irritation of the intestinal mucous membrane. Mendel obtained little or no result from the internal administration of these substances, but considered that, given in the form of enema, much was to be hoped from them. Erler has since obtained negative results from the internal administration of lactate of soda.

Fischer has used Mendel's method of administration by enema, with the object of quieting excited



lunatics of various kinds. A mixture of lactic acid and water was used, to which carbonate of soda had been added until the fluid had a neutral reaction. The enema was generally given by Simon and Hegar's method, allowing the fluid to flow slowly into the bowel, by which means it passes much higher up into the large intestine than when a syringe is used. The dose generally commenced at a little over a drachm, being steadily increased up to half an ounce or more; in one case more than an ounce was used at one time, but no evil effects were observed in any of the cases. All the injections were retained, except some of those which were administered with a syringe. Eleven cases are related in which this method of treatment was adopted, but in not one of these, nor in any other, did rest or sleep follow which could fairly be ascribed to the lactic acid. In three of the cases the patients became quiet, but good reasons are given in each for not regarding this as a result of the treatment. In one case the quantity of urine secreted was very largely increased by an injection containing five drachms of lactic acid; the same effect has since been observed in a patient who has been taking it by the mouth, and in whom an increased flow of saliva was also caused. One woman, who took two-and-a-half drachms internally in the evening, passed no urine all night, a thing which she had never been known to do before. No special effect of the lactic acid upon the respiration, circulation, temperature, or intestinal tract was observed.

Fischer has commenced another series of experiments, administering lactic acid internally in the form of lemonade, containing much sugar, and freely diluted with water; he has already obtained some encouraging results, but considers himself justified meanwhile in stating that lactic acid given as lactate of soda, in the form of an enema containing from two-and-a-half to nine drachms, is ineffectual in quieting or procuring sleep for excited lunatics.

WENDT ON THE EFFECTS OF BROMIDE OF POTASSIUM IN EPILEPSY.—In the *Zeitschrift für Psychiatrie*, Band 33, Heft 3, Dr. Wendt, of Sachsenberg, gives full details of six cases of long-standing epilepsy with insanity, carefully observed for the purpose, for periods varying from nine to twenty-one months, during most of which time they were taking the bromide of potassium. His results are not all of them new, but may be noticed shortly.

In all the cases, the number of the fits was diminished. Doses of seventy or eighty grains in the twenty-four hours had only a slight effect; two drachms in the same time were generally found sufficient, but sometimes double that amount was given with advantage, in cases where the fits were very frequent.

In two cases the patients, after taking the drug for many months, seemed to be no longer affected by it, and yet these were the ones who had been most markedly benefited by it in the first instance. In five cases the mental condition was improved by the treatment, excitability and discontent being lessened; indeed two demented patients were considerably benefited, employing themselves as they had not previously done.

The toxic action of the drug was repeatedly observed; it consisted in disturbances of digestion and paralytic symptoms, e.g., unsteady gait, hesitating speech, giddiness, susceptibility to fatigue. These nervous troubles were most marked towards evening. The men were far more tolerant of the drug than the women, but were frequently subject to acne; both

the women suffered from inflammatory cedema of the legs. In all cases the soft palate showed very slight sensibility to touch.

All the patients observed lost weight after prolonged treatment by bromide of potassium, and this was especially marked in those cases in whom intoxication by the drug was caused.

The good effect of the drug upon the mental condition appears to last much longer, after its use has been discontinued or the dose diminished, than its action in reducing the number of fits; indeed, the improved mental state often persisted even though the epileptic attacks became very frequent during a suspension of the treatment.

CHAS. S. W. COBBOLD, M.D.

CHARCOT ON METALLO-THERAPEUTICS.—For some time past, experiments have been carried on at La Salpêtrière upon the effects produced by the pure metals when applied to anæsthetic patients. M. Rabuteau explains the action of pieces of gold by its consisting of two metals, gold and copper, an electric current being generated by the metallic contact. He does not think that any electric phenomena can occur when pure gold is used. But in this opinion MM. Charcot and Burq disagree with him. Charcot tried the application of the purest plate of gold that could be had in a case of cerebral anæsthesia, and he obtained a reappearance of the sensibility. He was similarly successful in restoring the sense of taste by applying a plate of iron to the tongue; and the sense of smell by a metallic plate applied to the ala of the nose on the affected side. The cases of anæsthesia experimented on were all well marked.

T. CRANSTOUN CHARLES, M.D.

VERGA ON THE INHALATION OF NITRITE OF AMYL IN INSANITY.—Dr. J. B. Verga (*Journal of Mental Science*, Jan. 1877) made experiments in several cases of melancholia and melancholia with stupor. A temporary improvement was sometimes observed to follow the inhalation in even the worst cases (the patients smiling or answering a question); but although the treatment was continued for periods varying from 15 to 73 days, no permanent good ever resulted.

Dr. Tebaldi used the drug very carefully in six cases of melancholia attonita. He selected cases in which the general physical condition, and the pallor of the face, led him to believe that there was a condition of cerebral anæmia present. He found the nitrite of amyl to act invariably as a powerful excitant; the face became flushed, and patients who had previously been inert were at once aroused, answered questions, took food, &c. But these effects were always transitory, although the inhalations were continued twice daily for some time. He thinks, however, that the inhalation may be an important adjuvant to other treatment of a tonic and stimulant character.

[These results are very similar to those observed by the reporter in patients of the same class after inhalation of the nitrite of amyl for the purpose of ophthalmoscopic observation of the retinal circulation. (*West Riding Asylum Medical Reports*, vol. 1, 1871.)—Rep.]

CHARLES ALDRIDGE, M.D.

DESSAU ON SALICYLIC ACID.—In the *New York Medical Record*, April 7th, 1877, is an article by Dr. S. H. Dessau of New York, in which he gives the result of his experience in the use of salicylic acid and its salts. Dr. Dessau has employed the drug in

seventy-seven cases. In *Articular Rheumatism* it was employed in thirty-four cases. The remedy was given pure or dissolved in carbonate of soda. The author now generally employs the combination with the latter drug, in doses equal to fifteen grains every hour, until there is relief from pain, or the patient complains of buzzing in the ears, when it is decreased to every two or three hours. In the majority of the cases the patients were able to attend to their daily avocation in a week's time. In none of the cases were there any cardiac complications of recent origin. The author considers that salicylic acid is destined to supersede all other remedies in the treatment of acute articular rheumatism.

*Diphtheria*.—Fourteen cases of this disease were treated with the acid, three of which died. Every case of this malady which the author has seen in the commencement of its approach, and has treated with salicylic acid, has terminated in a victory for the treatment. In the light of recent theories as to the nature of the cause of diphtheria, advanced by various German authorities, namely the germ-theory, it would appear that salicylic acid is the scientific remedy for the disease. Letzerich has demonstrated that the movements of bacteria and micrococci, fungi obtained from the urine of children suffering from diphtheria, were arrested by a few drops of a weak solution of salicylic acid, and also destroyed by a stronger solution after an interval of five months.

*Erysipelas*.—"In this disease, especially affecting the head and face, I have used the salicylic acid in eight cases. All were of a severe form, and had existed from two to eight days. In all of the cases the cure was rapid and permanent, an improvement being observed in twenty-four hours." The cure was generally complete in from two to four days.

*Scarlatina*.—Eight cases of this disease were treated with the acid, with one death, which took place at the end of the third week from pulmonary oedema. "No acid had been taken in this case for two weeks previous to the accession of the pulmonary complication."

*Typhoid Fever*.—Seven cases of typhoid were treated either wholly or partially with the acid. All but one were in children under fourteen. The recoveries were favourable, but the acid does not seem to have shortened the duration of the fever in any material degree.

*Diphtheroid Pharyngitis*.—The author applies this term to a severe form of pharyngitis, sometimes attended with some enlargement of the tonsils and small exudative deposits, opalescent in character, upon them. There is high fever, much depression and pain in the pharynx on swallowing. Three cases were treated with a gargle (1 in 300) of the acid, with instructions to swallow a portion before spitting it out, and all were well in less than two days.

Of the three other cases in which the author used the acid, two were cases of *puerperal septicæmia* and one of *diphtheritic stomatitis*. In the former, the fever was reduced, and pain in the abdomen disappeared after two or three days' use of the drug in hourly doses of fifteen grains. In the last-mentioned case, a child three and a half years old, the acid was used as a wash, with rapid success.

To the physiological symptoms of the drug observed by various writers, Dr. Dessau adds dizziness and slight bleeding from the throat, which occurred in one case after using the pure acid.

GRIFFITH ON CHLORAL IN SEVERE SORE THROAT.—Dr. Griffith of Springfield, Illinois, recommends, in the *Chicago Medical Journal and Examiner*, the following application to the ulcerations in the severe and very painful sore throat of scarlatina: chloral, five grains; glycerine, twenty-five grains. After this has been applied with a brush the pain is much diminished, and the patient can swallow medicine or food without the severe pain which the action caused before.

W. DOUGLAS HEMMING.

JAMIESON ON OIL OF TURPENTINE IN SCIATICA.—In a paper read before the Medico-Chirurgical Society of Edinburgh, and published in the *Edinburgh Medical Journal* for March, Dr. W. A. Jamieson recommends the use of oil of turpentine in sciatica, especially in the form connected with the period of degeneration of tissue. In this form of the disease, pain often commences first in the lumbar and sacral regions, and then after a variable time creeps downwards into the parts more immediately supplied by the great sciatic nerve. Points tender to touch also manifest themselves successively from above downwards. Cutaneous anæsthesia is also a symptom, but is often masked in the early part of the disease by the tenderness of certain portions of the skin becoming a prominent feature during its decline. The motor branches of the nerve are often, indeed, usually affected, locomotion being impaired quite independently of the pain resulting from use of the limb, and consequent pressure on the nerve and its branches by muscular contraction. The predisposing cause is in many cases long-continued pressure on the sciatic nerve, as in persons of sedentary occupations; and perhaps position in sitting may determine which nerve is affected. Dr. Jamieson has employed turpentine as the first remedy in eleven cases of this affection. In ten, a single dose produced such an amelioration as to render lying on the side affected, or even sitting up, quite possible. A second or third, in several even a fourth dose, was required to reduce what was previously intense suffering to a state of slight numbness. In one man it failed to cure, though his case seemed well suited for its employment.

To do good in the sciatica of the period of tissue-degeneration, turpentine must be given in doses of at least two drachms, combined with half an ounce of castor oil, suspended in mucilage, and rendered more palatable by the addition of an ounce or so of cinnamon-water. The draught is best taken early in the morning. The dose generally acts powerfully two or three times, but its action is not followed by exhaustion at all commensurate with its effect on the bowels. Sometimes there is considerable difficulty in keeping the mixture down; usually, however, this is less urgent when cinnamon-water is employed as the vehicle. In the treatment of all forms of sciatica, absolute rest in bed must be maintained, not only while the pain continues, but for some time after it is gone. This is oftentimes difficult, as patients rebel against what they consider an unnecessary restriction.

BRUEN ON JABORANDI IN BRIGHT'S DISEASE.—Dr. E. T. Bruen, physician to the Philadelphia Hospital, recommends the use of jaborandi in the dropsy of Bright's disease (*Philadelphia Medical Times*, April 14). He relates three cases, and refers to four others, in which he used jaborandi to relieve the suffering caused by the dropsy when uræmia



appeared inevitably about to come on, and recurred to its use whenever the symptoms appeared.

He knows no other agent which will afford so great relief as this drug. The use of steam-baths cannot be substituted in its place, though these are valuable in a few cases where jaborandi is, for some reason, inactive; but some of his cases were relieved by the drug after steam baths had totally failed.

There is very little depression of the system from its use. In one instance a nurse gave a dose of it to a man suffering in the second stage of pneumonia with some symptoms of typhoid state: here there was considerable depression, but the free administration of stimulants in twenty-four hours relieved all bad effects. In one case of phthisis a profound sialagogue effect was produced: the patient filled several receptacles during the night, but all inconvenience passed away during the day. After using jaborandi the patients were placed on milk-diet, principally, and Basham's mixture.

Dr. Bruen says that after some years' experience in the treatment of Bright's disease, he has never had so favourable results from any other drug or plan of treatment in the management of this disorder.

**GUILLAUMET ON THE TREATMENT OF SYPHILITIC ULCERS.**—M. Guillaumet (*Traitement des Ulcérations Chroniques*, 1876) recommends the use of bisulphide of carbon in the treatment of syphilitic ulcers, as a means of producing rapid cicatrization. To overcome the disagreeable odour, the following formula is recommended: R Bisulphide of Carbon, ʒxvi.: tincture of iodine, ʒiv.: essence of mint, 16 drops.

**SOULEZ ON CARBOLATED CAMPHOR AS A SURGICAL DRESSING.**—Dr. Soulez, of Romorantin, recommends this substance (*La Tribune Médicale*, December 24). He prepares it by mixing 15 grains of carbolic acid (dissolved in an equal quantity of alcohol) with 37½ grains of powdered camphor. The product is an oleaginous pale-yellow liquid, with a feeble odour of camphor, and none of carbolic acid. It does not mix with water or glycerine, but mixes with olive and almond oils. The infusion of saponaria (1 part of the leaves of soapwort to 10 parts of water) emulsifies it, as does also the alcoholic tincture of Panama bark. When mixed with an equal part of the carbolated camphor, this tincture produces a mother emulsion, which, when weakened with water, is used to prepare the antiseptic wadding.

In dressing a wound, Dr. Soulez covers it first with a square of wadding, which is impregnated with a mixture of carbolated camphor and olive-oil. This must be large enough to extend 2½ to 3 inches beyond the wound. This is then covered by six other layers of wadding, impregnated with the emulsion above mentioned. Each layer should be one inch wider than the one below it. A thin envelope of caoutchouc is then applied to prevent evaporation, and over this a layer of dry wadding, and the whole is then secured by a bandage. The author alleges that this dressing is very easy of application; all the materials can be prepared beforehand and kept in well-covered jars. Before applying it, the wound should always be washed with the emulsion of carbolated camphor. When applied to a stump, this dressing keeps it enveloped in a warm atmosphere saturated with vapour of water, which lessens the exciting effects of the oxygen of the air, and is protected by the numerous layers of soft wadding, which

keep out all infecting germs. Dr. Soulez renews the dressing usually every six days, but sometimes leaves it on for ten days. So far he has never known the carbolated camphor to cause the least irritation of the skin or the wound. When the caoutchouc is removed, all the layers of wadding are found to be as moist as when first applied. He states that he has obtained the following advantages from the use of his dressing: 1. Lessening of the reaction after major operations; 2. Cessation or diminution of the pain; 3. Diminution of the suppuration.

#### RECENT PAPERS.

- On the Action of Arsenic on the Nutrition of the Tissues. By M. Bomaud. (*Lyon Médical*, April 27.)  
 Critical Reflections on the Use of Cold Baths in the Treatment of Typhoid Fever. By Professor Peter. (*Bulletin Général de Thérapeutique*, April 15.)  
 On the Actions of several New Drugs on Children. By Dr. Abelin. (*Ibid.*)  
 Note on the Sulphate of Cinchonidine. By M. Pasteur. (*Ibid.*)  
 The German Sulphate of Quinidine. By M. Bouchardat. (*Ibid.*)  
 The Hypodermic Use of Colchicin in Rheumatic Affections. By Dr. O. Heyfelder. (*Berliner Klinische Wochenschrift*, April 9.)  
 A New Method of Iodine Treatment in Feeble Ricketty Children. By Dr. Gemmel. (*Ibid.*)  
 The Balneotherapeutic Value of Carlsbad Waters in the Thermal Treatment of Simple Ulcer of the Stomach. By Dr. Fleckles. (*Allgemeine Wiener Medizin. Zeitung*, April 10 and 17.)  
 On Lactate of Soda as a Hypnotic. By Dr. Kroemer. (*Deutsche Medicin. Wochenschrift*, April 14 and 21.)  
 On the Preservation of Ergot of Rye. By H. Mourrut. (*Journal de Thérapeutique*, April 25.)

#### OBSTETRICS AND GYNÆCOLOGY.

**TARNIER ON A NEW FORCEPS.**—In the *Annales de Gynécologie*, March 1877, there is a description of a new forceps by M. Tarnier. The handles are curved, so that the instrument resembles in shape the letter S, the upper segment of the letter representing the blades, the lower segment the handles. Into the lower end of the blades, two traction-shafts are fitted, possessing a curve corresponding with that of the handles. A cross-bar unites them at their lower ends, and is the point from which traction is made. There is a screw on the handles, by which the blades are tightened over the foetal head. Each blade is applied with its traction shaft adjusted; the cross-bar fits on at the end when the forceps is applied. M. Tarnier asserts that, by means of this forceps, the traction can be always made in the direction of the axis of the pelvis, whatever may be the position of the foetal head. He says that it is a real instrument of traction, and not a lever like the ordinary forceps. It allows the foetal head to follow the curve of the pelvis with freedom.

**PAJOT ON TRACTION WITH THE FORCEPS.**—In the *Annales de Gynécologie* for March, there is an article by Professor Pajot, who points out that, in order for a forceps always to produce traction in the axis of the pelvis, the following conditions would be necessary. 1. The pelvis must be fixed. 2. There must be a fixed point outside the pelvis from which the force employed may originate. 3. The instrument must be absolutely rigid. M. Pajot remarks that he is satisfied with the ordinary long forceps, by which traction can be always approximately made in the direction of the axis of the pelvis.

**GREEN ON ICTERUS GRAVIDARUM.**—In the American supplement to the *Obstetrical Journal of Great Britain and Ireland*, Jan. 1877, there is re-

ported the following case of icterus gravidarum. Mrs. H., aged thirty-one, seven months pregnant, had been married nine years and given birth to two children. She had been subject to repeated attacks of malarial fever. When Dr. Green first saw her, she was suffering from severe neuralgic pains in the lower limbs, in the pelvis, and occasionally in the back, recurring with violence every second night. Large doses of quinine and opium had been administered to relieve the pain. There was, at this time, no jaundice. Three days later (April 18th) she complained of intense headache, loss of appetite, great prostration, restlessness, nausea, with vomiting of brown bilious matter, and of pain in the abdomen. Pulse 110, temp. 99½ deg., resp. 20. On examination *per vaginam*, the rectum was discovered loaded with feces; and upon the right side of the neck of the womb, was a circumscribed spot very tender to the touch. There were no signs of labour. On April 19th she had pain in both hypochondria, nausea, and vomiting of dark matter; the conjunctivæ were yellow, and the skin was becoming jaundiced; she had occasional pain in the pelvis. The urine, which had been retained, was drawn off by the catheter. Dr. T. G. Thomas was called in to decide the question of inducing premature labour. He pronounced the case to be one of cholæmic poisoning, and advised induction of labour. Labour, however, came on spontaneously, and a dead foetus was born. The foetus was not jaundiced.

The patient's condition was not improved by her delivery. She gradually became comatose, and died on the 23rd, on which day the pulse was 110, temp. 99 deg., resp. 8, marked in the intervals with three or four spasms of the glottis. No necropsy could be obtained; but the case was evidently one of acute yellow atrophy of the liver.

**CAMPBELL ON BLOOD-LETTING IN PUERPERAL ECLAMPSIA.**—Dr. Henry F. Campbell, of Georgia, U.S.A., in the *American Journal of Obstetrics*, Aug. 1876, arrives at the following conclusions on blood-letting in puerperal eclampsia. 1. Neither the recent investigations of physiology, nor clinical observations, nor the results of therapeutics, can authorise us at the present time in recognising either cerebral plethora, or cerebral anæmia, or uræmia, or other toxic condition of the blood, as furnishing an uniform etiology for puerperal eclampsia. 2. The proximate cause of eclampsia having been recognised as one and the same as that of almost all morbid nervous phenomena, viz., centric and peripheral irritation or exaggeration of reflex excitability, then the sole indication takes precedence—to quiet and to subdue irritation.

**ATTHILL ON EPITHELIOMA OF CERVIX UTERI.**—In the *Dublin Journal of Medical Sciences*, Feb. 1877, is an account of a case of amputation of a large epitheliomatous mass filling up the vagina. Dr. Atthill passed the ecraseur round what he thought a healthy tissue, above the epitheliomatous mass, and removed it. After it was removed, Dr. Atthill found that the wire had drawn in a fold of vaginal wall, and opened the cavity of the peritoneum. Under the circumstances, he considered it best to leave the patient alone, such cases not being necessarily fatal. She rallied somewhat, there was no hæmorrhage, and she died within forty-eight hours, from collapse. Dr. Atthill remarks that, had Dr. Marion Sims' operation of scooping the mass away been adopted, the accident of opening the peritoneum could not

have happened. The case shows the possibility of the accident. FANCOURT BARNES, M.B.

**HILL ON MATERNAL IMPRESSIONS ON THE FŒTUS.**—In the *Boston Medical and Surgical Journal* for Jan. 27, there is an extract from a paper on this subject by Dr. J. L. Hill, of Albany, Oregon. The author states that it was with reluctance that he had been forced to the conclusion, that the popular belief in some deformities being due to certain maternal impressions has some foundation in fact. In support of this conclusion he gives a few instances that have come under his own observation, and quotes three mentioned by others. One of these, a case of intra-uterine amputation, resulting, as we believe, from strictures from amniotic bands, may have been a coincidence. Another, being a hairy, so-called "mother's mark", is referred to an impression that may or may not have produced the effect. The others are instances where the effect may have been produced by the alleged cause. In such, and similar instances, the rational line of argument seems to be that, as no direct nerve-communication exists between the mother and foetus, yet, inasmuch as electrical currents are induced in contiguous though not continuous wires, similarly, nerve-impressions in the mother may induce nerve-impressions in the foetus at certain stages of its development, which may hinder, or alter, or arrest such development, and produce a resulting abnormality. Facts, if proven, are not to be gainsaid; and it therefore remains to bring to bear on the question our knowledge of the force of certain external impressions on the nervous system to produce serious mischief in the body, and to argue from such known force the existence of an induced impression on so delicate an organism as the growing foetus. It is much to be desired that the various specimens of which we from time to time hear should be preserved and brought before some competent society, and the various factors duly weighed, as to the probability or otherwise of their power in producing the alleged result. H. SMITH, M.D.

**SEGUIN ON MATERNAL IMPRESSIONS AFFECTING THE FŒTUS.**—In the *Philadelphia Medical Times* of Dec. 23, 1876, Dr. E. Seguin relates eleven cases in which maternal impressions apparently caused deformity and arrest of development, or otherwise injure the foetus.

1. An officer would always faint at the naked parlour sword. His father had all but killed his mother with such a weapon whilst she was carrying him.

2. A girl was idiotic; her six brothers and sisters very intelligent. The mother had been anxious about the father, who was at the wars.

3. Mrs. D. was no sooner pregnant than she took to drinking brandy; her boy was pearly white, myopic, and idiotic.

4. Mrs. B., after dancing at a ball, suckled her child while still overheated; it became idiotic and epileptic.

5. In a moment of anxiety, Mrs. C. jumped into a carriage with her suckling of 15 months so far healthy. She gave it the breast once during the journey, which made it sick, and after an acute fever, it became a cripple and idiotic.

6. Mrs. H. suckled one healthy child while pregnant with a second; it became hydrocephalic and idiotic.

7. The mother of Blind Tom, a slave, used to look at a picture of a boy pounding drugs in a mortar:



Blind Tom used to stand in the attitude of the boy at the mortar, when at rest.

8. A pregnant woman longed for ham which was not given her: her girl was born with nævi on the back of her head and legs resembling ham.

9. Mrs. M. saw a man with no left hand. She exclaimed, "My child will be born with one hand," and so it was.

10. A pregnant woman had anxiety; her son was born an idiot.

11. Mrs. R., alone in a house one night, saw some one wrapped in a sheet for disguise trying to enter; she piled furniture against the door and repulsed him. Soon afterwards she gave birth to a healthy male child, which always awoke at the same hour and screamed as if in terror. He was severed from the breast of his mother, and was cured.

FANCOURT BARNES, M.B.

CHENERY ON UNUSUAL COURSE OF RECTO-VAGINAL FISTULA.—In the *Boston Medical and Surgical Journal* for Nov. 23, Dr. E. Chenery describes the case of a young woman, aged 28, who, while under treatment for general debility, anæmia, and costiveness, was seized with pain and irritation at the lower part of the bowel. A small swelling soon appeared, about an inch and a quarter in front of the anus, and three-quarters of an inch to the right of the perineal raphe. A purulent and offensive discharge came on from the vagina, with occasional bubbles of air. In this condition she consulted Dr. Chenery. On making pressure on this tumour, which was something larger than half a filbert, the matter escaped into the vagina and appeared at the vulva; and a speculum showed that the outlet was on the posterior wall of the vagina, about two inches within. The case was regarded as a rectal fistula in which the sinus had come to the inner surface of the skin, and, instead of perforating it, had burrowed upwards outside of the sphincter vaginae, and made its exit through the vaginal wall of the recto-vaginal septum. By the aid of a fenestrated speculum, Dr. Chenery introduced a fine flexible probe into the vaginal orifice of the fistular sinus, and carefully worked it down the serpentine track to the interior of the swelling, thus causing the end of it to impinge against the under surface of the skin; he then cut down upon it and brought it through without disturbing the parts. The next step was to introduce another probe at the point where the first came out, find the sinus, and follow it round the sphincter ani to the bowel. This was easily done; and the part was divided in the usual way. The probe being taken from the vaginal part and the canal well irrigated, the lower opening was plugged with a pellet of cotton, and the cut packed and dressed. The patient made a speedy and perfect recovery.

HADRA ON INTUSSUSCEPTION OF THE RECTUM IN PREGNANCY.—Dr. B. E. Hadra calls attention to intussusception of the rectum in pregnancy in *The Richmond and Louisville Medical Journal* of December 1876. He thinks it merits a greater share of attention than most text-books give to it. The long-standing constipations common in pregnancy, as well as the direct pressure exerted by the gravid womb upon the rectum in the direction of the sacrum, tend to produce the trouble. Two illustrative cases are given. Their symptoms were, stools very frequent, small, slimy, and more or less mixed with blood, and uncontrolled by internal medication, tenesmus, absence of fever, etc. Examination by the rectum easily revealed the intussuscepted fold. The treatment consists in copious injections of cold water

made with considerable force. These unfold the invagination, and produce natural evacuations.

LYMAN ON THE HORIZONTAL POSITION AS EFFECTING RETROVERSION OF THE UTERUS.—At a meeting of the Obstetrical Society of Boston (*Boston Medical and Surgical Journal*, Nov. 16), Dr. Lyman reported the following case. A young lady, who was a school-teacher and single, said to him that, although she might walk about all day without trouble, she dreaded going to bed, as the moment she lay down she had great pain in the back; she could find no comfortable position, and her sleep was in consequence much disturbed. She had no pelvic difficulty, although the catamenia had been a little more free the past year or two. She was examined, first, in the standing position, and the uterus was found to be normally erect; when the patient lay down there was very slight retroversion. A small Hodge's pessary was introduced, and for the first time for months she was able to sleep with comfort. The patient had since reported the greatest possible relief from the application.

#### RECENT PAPERS.

On the Treatment of Fibroma of the Uterus with Subcutaneous Injections of Ergot. By Dr. Münster. (*Deutsche Medicin. Wochenschrift*, April 7 and 14.)  
The Proper Treatment of Pelvic Effusions. By Dr. Warren Brickell. (*American Journal of Medical Sciences*, April.)  
On some Cases of So-called Myxoma of the Placenta. By Dr. Storch. (*Nordiskt Medicinskt Arkiv*, Band viii, Häft. 4.)  
Double Parasitic Heterotypic, or Epigastric Monsters; Separation of Double Monsters. By M. Gross. (*Revue Médicale de l'Est*, May 1.)  
On Suckling. By M. E. Labbée. (*Journal de Thérapeutique*, April 25.)

#### PSYCHOLOGY.

CHAPMAN ON THE MORTALITY OF THE INSANE.—Dr. F. A. Chapman (*Journal of Mental Science*, April 1877) publishes some interesting tables on the comparative mortality of different classes of patients in asylums.

He concludes that the mortality of the insane depends upon: 1. Duration of residence in the asylum; 2. The form of the mental disorder.

In one table, Dr. Chapman demonstrates the percentage of deaths on the average number resident in ninety asylums during the years 1872 to 1875. The deaths per cent. in these four years are as follows.

Amongst those who have resided

	MALES.	FEMALES.	TOTAL.
Less than 1 year ...	31.37	17.64	24.04
From 1 to 2 years ...	15.58	9.30	12.20
From 2 to 3 years ...	11.24	7.99	9.64
From 3 to 5 years ...	8.50	6.05	7.27
From 5 to 7 years ...	5.25	6.07	5.74
From 7 to 10 years ...	5.32	4.87	5.05
Over 10 years ...	5.84	4.86	5.28
Average mortality ...	12.57	8.18	10.15

It is hardly necessary to state, writes Dr. Chapman, any of the deductions, as they are sufficiently obvious on an inspection of the tables.

The most obvious is the very high rates of mortality in the earlier years of residence, amounting during the first year to nearly one-third of the average number resident in the case of males, and to over one-sixth of that number among females. These rates rapidly diminish, being about one-half this during the second year of residence, until, at the end

of five years, the sources of excessive mortality appear to be nearly exhausted. The lowest mortality is not, however, reached until the end of seven years, when the rate is about half that obtaining amongst the total asylum population. After ten years, there is a very slight but distinct increase of the rate.

The difference of the rates of male and female patients obtains almost throughout; the male mortality exceeding the female during the first year, nearly as two to one; during the second, as three to two; the difference diminishing until, as the period of least mortality approaches, viz., from five to seven years, the female mortality is slightly in excess. In the following years the male mortality is again in excess, in the ratio of about six to five.

Secondly, with regard to the influence of the form of the mental disorder upon the mortality, the following table shows the number and percentages of deaths occurring among different classes of patients in the Hereford Asylum, during the four years 1873-6 inclusive.

	MALES.	FEMALES.	TOTAL.
Probably curable cases ... ..	3.4	7.1	6.0
Congenital { Free from epilepsy ... ..	1.9	1.7	1.8
cases { With epilepsy ... ..	8.2	4.7	6.8
Epileptics, non-congenital ... ..	12.4	3.2	9.0
Organic { General paralysis ... ..	75.0	50.0	68.0
brain disease { Other forms ... ..	26.5	—	18.0
Chronic { More or less excited			
Insanity { chronic mania ... ..	4.2	4.8	4.6
{ Quiet (dementia, mono-			
mania, etc.) ... ..	5.6	7.7	6.7
Totals ... ..	7.5	5.4	6.5

All except Epileptics and Paralytics 3.8 ... 5.4 ... 4.7

A comparison of these last figures with those classed according to the duration of residence, leads to the conclusion that the high mortality during the earlier years of residence is especially due to the presence among the insane of general paralysis and other fatal forms of brain-disease. Epileptics also appear to have a high death-rate; and, as these are not eliminated during the first few years of their residence, there can be no doubt that the mortality of the older residents, apart from the epileptics, would be much less than is shown in the table referring to duration of residence.

It is also worth noting that the mortality of congenital imbeciles, free from epilepsy, and including many miserable idiots, is not very far from that of the general population.

It might, perhaps, be argued from the figures, that chronic mania is less fatal than dementia; that patients rust away more often than they wear out; and, whilst this may be so, since many patients are never better in health than when suffering from a certain amount of subacute excitement, Dr. Chapman thinks the true explanation of the figures above (illustrating the effect of the form of mental disorder upon the mortality) is, that the more aged patients tend to be classed as dementia, the younger as chronic mania.

There are various other deductions that might be drawn, but Dr. Chapman thinks that the numbers are much too small for much confidence to be placed in them. Among these deductions are such as that acquired is more fatal than congenital epilepsy, and that epilepsy is more fatal among males than females.

[This paper may be regarded as one of the most interesting and useful essays upon statistics that has been contributed to the literature of insanity since

the publication of the celebrated work of Dr. Thurman.—*Rep.*]

MAUDSLEY ON THE ALLEGED INCREASE OF INSANITY.—Dr. Maudsley (*Journal of Mental Science*, April 1877) arrives at the same conclusions with regard to the alleged increase of insanity as he had previously enunciated six years ago; viz., that there is no satisfactory evidence of an increase in the proportion of occurring cases of insanity to the population, and no satisfactory evidence, therefore, of an increased liability to insanity. The apparent increase is due to: 1. Registration of insane patients having been made gradually more complete; 2. A lower rate of mortality; 3. A lower percentage of recoveries on the admissions; 4. The effect of the Lunacy Act of 1845, which enjoined on counties to build asylums to make provision for their insane poor; 5. The effect of the Lunacy Act of 1853, which prescribed a quarterly return of the pauper lunatics not in asylums, by the medical officers of the unions; 6. The enforcement from time to time of the statutory provisions of the Lunacy Acts by the Lunacy Commissioners, whereby numerous cases were brought to light, by prosecutions of those who have received single patients without complying with the proper legal forms; 7. The Act of 1862, which rendered pauper lunatics chargeable upon the common fund of the union of parishes, instead of, as had formerly been the case, upon the particular parishes to which they belonged; 8. The Act of 1874, by which it was enacted that 4s. a week of the cost of maintenance of every pauper lunatic in an asylum should be defrayed by the State. The smaller ratio of recoveries after this date was no doubt due to the larger proportion of chronic cases included among the admissions, and may be represented as the measure of the Act of 1874, in transforming aged and broken-down paupers into lunatics.

Dr. Maudsley concludes as follows. It is a question, however, deserving attention, whether the present practice of crowding the insane of all sorts into large asylums, where the interests of life are extinguished, and where anything like individual treatment is well nigh impracticable, is so much superior to the old system in effecting recoveries as some persons imagine.

NEWINGTON ON NUTRIENT ENEMATA IN INSANITY.—Dr. H. Hayes Newington (*Journal of Mental Science*, April 1877) contributes some very practical remarks upon feeding, *per rectum*, at the conclusion of a description of a case of epilepsy, in which an extraordinary number of convulsions occurred.

The principal points to be attended to are: 1st. To carefully select the materials that may be considered best to be injected; and having chosen them, not to vary them unless urgent circumstances require it; 2nd. To avoid the addition of any chemical or manufactured adjuvant, *e.g.*, hydrochloric acid, pepsine, etc.; 3rd. To prevent the return of the injection. As a rule, no more than 4 oz. in bulk should be administered at one time. But, however small the injection is, it is of little use trying to send it up if, as often is the case, fecal collections block the way. As a preliminary, therefore, a large soap-and-water enema may be used; a considerable quantity of oil being added if the mass be sufficiently hard to resist the water. This may be repeated every other day. At the commencement of the treatment in spare people,



position does not much matter; but in weakened or fat people it is of great consequence that the patient lie on the back, and the instrument be passed between the legs. The effort to roll over, after the injection has been given, on the side, is quite sufficient to ensure its returning in many cases. There need be no hurry to withdraw the nozzle of the tube, since its sudden removal often causes irritation and consequent ejection. If there be a round shield to the instrument, and this can be held to the perinæum for a short time, so much the better. It is also a good plan to have a small piece of warmed flannel ready to be placed against the anus on the withdrawal of the tube. This is comfortable, and often allays the sudden impulse to use the commode or bed-pan. In extreme cases, it is advisable to introduce into the anus a plug, squeezed tight and oiled in the hand of the operator.

H. SUTHERLAND, M.D.

**NEEDHAM ON HOMICIDE BY AN INSANE PERSON.**  
—Dr. Needham relates the following case in the *Journal of Mental Science*, Jan. 1877.

Elizabeth Cole, aged 30, wife of a labourer, married six years, mother of three children, was charged with the wilful murder of her youngest child, aged three months. Previously to her marriage, she had suffered from attacks of melancholia, and since her last confinement had been relapsing into a melancholic state, so that a young girl was set to watch her. Getting rid of the girl and elder children, she decapitated the infant with a chopper. On being questioned, she said, "I did it; I could not help it; I felt I must do it." She was evidently intensely depressed, and could only be induced to speak at intervals, and then under pressure. She said that her husband had recently taken a larger house than she thought she could manage in her then state of health, and she had therefore felt depressed in spirits, and had not slept well since the birth of her youngest child. She feared she would not be able to attend to it properly, and that it would suffer from neglect; gloomy thoughts came into her mind, and suicide presented itself to her as a means of freeing her from the difficulty; she struggled against it, for she felt that she could not leave her baby; then the thought occurred to her, "Kill the baby, and take it from the trouble to come." This idea dwelt in her mind until she acted upon it. She was not vexed with it; she loved it very dearly, and only wished to save it from suffering. This account was dragged from her little by little, and only told very unwillingly. At the trial, the Judge (Mr. Justice Grove) drew an important distinction in his ruling. After stating the well-known unscientific definition of responsibility, he said, "A knowledge of right and wrong does not necessarily imply such a knowledge as is possessed by an ordinarily sane mind. An insane person may know that he is taking away human life, and so committing a crime in the eye of the law, but to him it may seem a rightful, or, at least, not a wrongful act; and, in this view, he would not be responsible." Dr. Needham remarks, "In this sense I could reconcile the dictum of the law and the teachings of science, and aid the prisoner by affirming that, although she did recognise the abstract difference between right and wrong, and did know that in committing murder she was doing wrong in the eye of the law, I was satisfied that the law set up in her own mind as the result of disease, was to her a higher law than any mere external code, however perfect, could possibly be." The prisoner was acquitted on the ground of insanity.

**TOLERANCE OF FOREIGN BODIES BY THE INTESTINAL CANAL.**—The thirtieth report of the Commissioners in Lunacy contains a very remarkable instance of the power which the alimentary canal possesses of disposing of even large quantities of foreign matter, when due care and skill are exercised to protect the coats of the bowel during the passage of the foreign bodies. The case affords also a remarkable instance of the recurrence, after a lapse of years, of a morbid propensity once developed in the mind of a patient of the melancholic type, with a suicidal tendency.

A female patient, E. W., aged 43, was admitted to the Bristol Asylum on June 15, 1875.

On the occasion of her first residence there, in 1863, she swallowed (with a distinct suicidal intention) the entire contents of a domino-box, 54 dominoes in all, 50 of which were recovered by vomiting, along with fragments of stone weighing 14 ounces, while four dominoes and some stones passed through the intestines. E. W. was shortly afterwards transferred to the Wells Asylum, but escaped on the road and was not retaken. In May 1871, she was again admitted to the Bristol Asylum with suicidal fancies; and, after two actual attempts, she was again removed to Wells and discharged thence, recovered, in 1873. As above stated, she returned to the Bristol Asylum in 1875, or twelve years after swallowing the dominoes; the certificates again give a history of renewed attempts at suicide.

On July 31, 1875, early in the morning, she got possession of 15 shutter-screws; and, in the course of three-quarters of an hour, swallowed 13 of them. The screws were new ones, and thirteen of the same pattern weighed  $24\frac{1}{2}$  ounces, avoirdupois weight. She made a confession before the screws had been missed, and stated the number to be 13. To prevent injury of the coats of the stomach, Mr. Thompson, the medical superintendent, administered a mess of tapioca pudding and gruel, of which, without much persuasion, she took a very large quantity.

The screws consist of a body, two and a-half inches long, half inch thick, with a square head, and with a raised collar, nearly three quarters of an inch in diameter. Recovery by the œsophagus was out of the question, and it seemed doubtful if the pyloric valve would take up any one of them and pass it on.

On September 10, however, the patient passed some of the screws by the bowel, and on February 4 she passed the last of the 13 in the same manner. The dates of ejection were Sept. 10, Oct. 19, Nov. 26 and 27, Dec. 3, Jan. 3, 9, 19, and 20, Feb. 3 (two), Feb. 4 (two).

During these months the patient suffered much pain of a spasmodic character, described by her as like labour-pain. The treatment was chiefly dietetic, large quantities of soft food being taken; but, in addition, she had night and morning subcutaneous injection of morphia. At first purgatives were avoided, but ounce doses of olive-oil were given once a day, and enemata occasionally. Latterly the treatment became bolder, and large doses of castor-oil were given, and after this the screws came away faster. The weight of the recovered screws was nineteen and three quarter ounces, showing a loss of four and three quarter ounces in their passage through the bowel.

Mr. Thompson remarked at the time "the patient was a melancholiac of the most abject type, and with a touch of moral obliquity. I do not think she wished to commit suicide, but rather to draw attention to

herself, and to cause trouble." However, she has since admitted that her object in swallowing the screws was to destroy herself.

**FINCH ON RESPONSIBILITY AND MENTAL DISEASE.**—In the sixth annual report of the Leicester Borough Asylum, Mr. Finch, the medical superintendent, reports a case of the murder of an attendant by an epileptic patient, which is most interesting as showing the indisposition of judges and juries to admit the plea of insanity, even in cases where there can be no reasonable doubt of the patient's mental unsoundness. The counsel for the patient objected to his being called upon to plead at all, but the Judge and jury overruled the objection upon the evidence of the surgeon of the county gaol, "That he appeared quite rational; was able to understand witnesses and instruct counsel." According to Mr. Finch, he seems to have been as troublesome, sullen, abusive, and dangerous an epileptic as could be met with. The Judge, however, charged the jury that "there was no doubt the prisoner was suffering under a delusion, but they must not say that a man was insane because he was suffering from delusions, unless they were satisfied that he did not know what he was doing was wrong. If the jury came to the conclusion that the prisoner's mind was unsound at the time he committed the act; that he was suffering from defective reasoning powers, and insanity in his mind; that he was not able to understand he was committing murder, and only meant to wound the deceased in order to gain a hearing for his alleged grievances, it would be competent for them to say he was not guilty, on the ground of insanity." The verdict was "guilty; but strongly recommended to mercy on the ground that he occasionally suffered from delusions", or otherwise, insane—but not insane. Sentence of death was passed, but was afterwards commuted to penal servitude for life at Pentonville. Broadmoor may now expect to receive only lunatic criminals, the ordinary prisons accommodating for the future criminal lunatics.

CHARLES ALDRIDGE, M.D.

#### RECENT PAPERS.

The employment of the Oesophageal Sound in the feeding of the Insane. By Dr. Sejaret. (*Annales Médico-Psychologiques*, March 1877.)  
Epileptics. By M. Legrand de Saulle. (*Gazette des Hôpitaux*, April 5 and 17.)

### OPHTHALMOLOGY AND OTOLOGY.

**ROOSA ON THE DISPROPORTION BETWEEN THE POWER OF HEARING THE TICK OF A WATCH AND THE HUMAN VOICE.**—In the *American Journal of Medical Sciences* for January, Dr. St. John Roosa, in an article bearing the above heading, gives a number of cases in which the peculiarity mentioned in the title exists.

From his observations, he concludes that "those cases are least amenable to treatment in which the watch is heard relatively better than the voice".

He has not found this disproportion in any striking degree, except in cases that have become chronic from acute suppuration, and in the insidious forms of disease of the ear that are never acute. Happily for those suffering from chronic suppuration, they usually hear the voice relatively better than the watch. In these latter cases, Dr. Roosa thinks that the disproportion may be explained by the fact of there

being in them a more uniform and general pressure exerted upon all parts of the cochlea and the rods of Corti, or the terminal auditory apparatus, than in the chronic cases, where localised or isolated changes may occur.

The subject of *Paracusis Willisiana*—hearing better in a noise—is discussed. He says that, although in these cases the voice is heard better, the power of hearing a watch, or of hearing the outside or general noise, is not improved. He says this phenomenon also occurs in subacute cases of catarrh, from which complete recovery occurs; and in these cases the usual pathological theories given to explain the peculiarity, viz., relaxation of the drum-membranes and rigidity of the base of the stapes, will not hold.

He recites a case where both membranes were only represented by a "rim", no ossicles could be seen, and the tympanic mucous membrane was swollen and over-secretive. With an artificial drum the hearing was greatly improved, but this occurred only in moderately quiet places; "that is to say, if he went into a rail-car, he needed no help, he could hear the conversation as well as, if not better than those who had healthy ears; but he could not hear the wheels, the engine; in short, the waves of sound from a distance, or the modulations not produced by the human voice, did not seem to reach his nerve. When he used his artificial drumhead like ordinary people, he had some difficulty to hear, on account of the surrounding noise."

The persons in whom this peculiar phenomenon occurs hear better in a noise than people whose hearing power is normal; but this seems to extend only to the human voice. Dr. Roosa thinks one of the usual explanations from "rigidity, either of the ligament which holds the base of the stapes bone, or of the membrana tympani secundaria", is not adequate to explain all the facts.

In the case described, the use of the artificial drum caused "a kind of Daltonism of the ear, an insensibility to certain sounds. Perhaps, then, the elevation of the pitch of the voice, or what is the same thing, the increase in the number of vibrations in a given time, with a change in quality of the voice of the speaker, taken together with the insensibility to outside sounds, enabled this patient to hear better in a noise."

[Dr. Roosa seems not to have thought sufficiently of the explanation given by Willis himself, viz., "a relaxation of the membrana tympani", which relaxation can be participated in by the whole of the conducting apparatus. The patient in his case heard better *plus* noise or *plus* artificial membrane singly; but being placed in a nearly normal tension by one or other, the addition of the second placed him in the same condition as the normal ear under the same circumstances.—Rep.]

**GRUBER ON A MEANS OF DIAGNOSIS OF ANOMALIES IN THE SOUND-CONDUCTING APPARATUS.**—Professor Gruber, of Vienna, gives in the *Allgem. Wiener Mediz. Zeitung*, No. 7, 1877, a new means of diagnosis of anomalies of the tympanic cavity.

When a tuning fork is vibrating close to the external meatus of a healthy ear, and Valsalva's method is done, the sound is decreased by the increased outward tension of the membrana tympani. Gruber accordingly argues therefrom, that if the patient, when this experiment is made, do not notice that the sound is decreased, the membrane has already a *plus* tension outwards; while, if the patient hear



better under the same condition, there is a *minus* tension.

If a vibrating tuning fork be placed on the head, and Valsalva's method be performed, the sound is increased to a normal ear, while, if there be *plus* tension, the sound is not changed; but if there be *minus* tension, it is decreased, as the membrane is made more capable of transmitting sounds than when lax.

The two methods act as controllers to each other, which gives this entirely subjective diagnosis much more importance.

GRUBER ON THE ARTIFICIAL MEMBRANA TYMPANI.—In the *Medico-Chirurgische Presse*, Professor Gruber, of Vienna, makes some observations on artificial membranes. He gives cotton-wool the preference over the elastic membrane of Toynbee, on account of the surgeon being able to adapt it better to different conditions of the natural membrane. He thinks that by it a continuous chain for the conduction of sound is more easily formed. He has made, and praises, artificial membranes of linen, and describes an instrument for making, and a pair of forceps for introducing them.

Professor Gruber frequently uses an artificial membrane as a conveyor of medicaments, preferring it to the in-dropping of solutions when he desires to limit the action to certain spots, or when there is a process of healing going on. The interference with this process by the repeated washing of the tissues by lotions is spoken against; and to prevent external influences from interfering with that process, he uses English plaister or linen as a covering to the healing tissue. He thinks the membrane of linen is better adapted for the application of medicaments than a piece of cotton-wool, on account of the latter pressing on and interfering with the circulation of the meats and cavity.

[Cotton-wool has been, as a rule, preferred in England, both as a means of improving the hearing, and as a medicament-bearer. Its simplicity recommends it to the patient, who is easily taught how to apply it, and it is preferred by surgeons for the same reasons as those given by Professor Gruber. Goldbeater's skin is used sometimes by the reporter, as a protector to healing perforations. It has advantages and disadvantages compared with the linen or plaister.—*Rep.*]

TRAUTMANN ON PARASITES OF THE EXTERNAL MEATUS.—Dr. Trautmann, of Berlin University, describes, in the *Berliner Klinische Wochenschrift*, 9th February, the animal parasites of the external meatus in the lower animals.

In deer the *Dermanyssus avium*, or *Hühnerlaus*, has been found, as recorded by Von Tröltzsch, causing inflammation with excessive purulent secretion.

Dr. Trautmann has found in the ears of sheep, dogs, and rabbits, the *Dermatodectes cuniculi*. He has seen them present in the external, middle, and internal ears, but thinks they are not capable of boring through a healthy membrana tympani. He believes that, having found their way into the tympanic cavity, they are able to pass through the membrana tympani secundaria. Before their entrance into the labyrinth, the rabbit shows little or no sign of discomfort; but, on their gaining an entrance there, the head was held in an oblique position, and a loss of equilibrium was noticed in attempting to move. Shortly after this, symptoms of meningitis set in, and death soon followed.

Though these animal parasites have not been found in man, Dr. Trautmann advises that children ought not to be allowed to fondle rabbits, dogs, or sheep, lest, the animals being affected by these parasites, the children might receive them.

W. LAIDLAW PURVES.

BRIÈRE ON GENERAL IMPETIGO OF THE WHOLE HEAD: ECTROPION OF THE LEFT UPPER EYELID.—A girl, aged 9, suffered from purulent ophthalmia, for which she was under Dr. Brière's care for a fortnight, when he lost sight of her. Five months afterwards, she was brought to his clinique with her head and face covered with thick impetiginous crusts, and suffering great constitutional disturbance. The left upper eyelid had been everted for five months. The tarsal cartilage was luxated, the conjunctiva enormously hypertrophied, and secreting an abundant puriform matter.

The general condition and the impetigo were relieved by appropriate remedies; and after much consideration Dr. Brière determined to attempt reduction of the ectropion after the plan adopted in paraphimosis. He therefore avoided scarification and the use of the bistoury, and confined himself to digital pressure. This proved both painful and difficult, but at the third trial the lid was replaced in its proper position, and kept there by means of a bandage. The next day the ectropion had returned, and was again reduced. This went on for seven days, with the same want of success; but the swelling of the tissues gradually subsided, and the lid at last kept its normal position. The bandage was worn persistently for a month. In spite of an outbreak of strumous inflammation, which threatened mischief, the case was ultimately successful.

Dr. Brière remarks that he has reported the case, to show that in a longstanding and apparently rebellious case it may be better to have recourse to such a simple proceeding as compression than to a surgical operation.

HUTCHINSON ON THE INFLUENCE OF THE SEXUAL SYSTEM ON DISEASES OF THE EYE.—Mr. Jonathan Hutchinson (*Royal London Ophthalmic Hospital Reports*, vol ix, part i) considers that we may safely assume the probability that the eye does suffer, both in connection with its functions and its structure, from influences brought to bear upon it through the sexual system.

In the larger class of cases the disorder is of a mere functional and temporary character; a loss of tone, consisting in such changes in the molecular constitution of the nerve-centres as may be wholly repaired by food, recreation, and rest. In a smaller class of cases, the symptoms just enumerated form the first stage of a disturbance which eventuates in structural alteration, degeneration, or inflammation. The cause lies in disordered nutrition, dependent upon not only excessive sexual indulgence and masturbation, but also upon frequent and continued erethism.

The subjective symptoms are, in the lighter cases, *muscæ*, a stiff and glassy feeling of the eye and lids; in the more serious cases, more or less impairment of vision. The objective symptoms in the more serious cases consist in softening of the vitreous body, and the presence of opacities in it, and atrophy of the optic disk, probably preceded by neuritis.

In one case, Mr. Hutchinson detected a slight haziness of the disk—so slight as to be almost doubtful. The associations between certain forms of am-

lyopia and disturbed or suspended menstrual function in women, and between slowly progressive atrophy and the failure of sexual functions in men, are dwelt upon with emphasis. The paper is one of great practical value.

**NETTLESHIP ON THE AFTER-HISTORY OF FIFTEEN CASES OF MALIGNANT TUMOUR OF THE EYE-BALL.**—A paper, by Mr. E. Nettleship, in the *Royal London Ophthalmic Hospital Reports*, vol. ix, part i, contains valuable data upon one of the most interesting and important points connected with malignant disease. The prognosis in such cases is rendered painfully uncertain by the extreme difficulty of keeping operated cases under observation.

Ten cases of sarcoma of the choroid, pigmented and unpigmented, and four of glioma of the retina, have been under notice for periods varying from two and a-half to five and a-half years. In four of the cases of sarcoma return took place locally in two; and in three (one of these two, and two others) there were deposits in distant organs. An important point in connection with these recurrences is mentioned, viz., that where return occurred, there was always good reason to think that the primary disease had been in progress for several years before removal of the eye, and in two cases there was a family history of malignant disease. In five of the cases of sarcoma there was no return, and Mr. Nettleship thinks it probable that, in these cases, the cure will be permanent.

Four cases of glioma of the retina are reported. In two the disease had extended to the outside of the sclerotic envelope; here there was rapid local return. In the other two cases the disease was completely intra-ocular, was removed early, and no return had been observed.

The history of the treatment of these cases should encourage the use of caustics after a thorough clearing away of infiltrated tissues; but it would appear to be a subject worthy of consideration, whether the caustic should be limited to chloride of zinc paste; and, more than all, if two or three days should be allowed to elapse between operation and the application of the caustic. In some hands the free use of the actual cautery, immediately after the operation, has yielded satisfactory results. LLOYD OWEN.

**RAEHLMANN ON CERTAIN PARENCHYMATOUS DISEASES OF THE CORNEA.**—Dr. W. Zehender's *Monatsblätter* for January contains a paper by E. Raehlmann on certain atypical parenchymatous diseases of the cornea, which produce striations and other linear opacities in the corneal substance. The paper is illustrated by ten lithographic sketches showing the various forms assumed by the opacities. Some of these are represented as stellate and moniform, and others consist of parallel or radiating lines, in some cases crossed by a second set at right angles to the first, like the shading of a pencil drawing. The author believes these opacities to be due to the infiltration of the lymph-spaces of the cornea with turbid fluid, resulting from conjunctival, episcleral, and scleral inflammation. He has observed these opacities in episcleritis, as the result of cataract operations, and abrasions of the cornea, as well as an accompaniment of diseases of the ciliary region, and uveal tract, especially if of syphilitic origin, and in strumous ophthalmia, with ulceration of the cornea. The opacities were examined by a magnifying power of about 5 diameters under focal illumination.

These opacities are always transient, leaving no traces of their existence after some weeks or months. They usually appear rapidly, remain stationary for a long time, and are afterwards quickly absorbed. They are always accompanied by injection of the vessels around the margin of the cornea. The appearance of these opacities is often accompanied by a slight but perceptible decrease of tension of the eyeball, and iritis is very liable to occur in conjunction with them.

#### RECENT PAPERS.

- Report on the Percentage of Near-sight at Harvard College. By Dr. Hasket Derby. (*Boston Medical and Surgical Journal*, March 22.)  
 A Contribution to the Etiology of Optic Nerve Atrophy. By Dr. C. S. Bull. (*American Journal of Medical Science*, April.)  
 Obstinate Blepharospasm cured by Inhalation of Nitrite of Amyl. By Dr. G. C. Harlan. (*Ibid.*)  
 So-called "Second Sight" of Old People. By Dr. S. M. Burnet. (*Ibid.*)  
 On Lupus of the Conjunctiva and Cornea, and on the occurrence of Giant-cells in Diseased Connective Tissue of the Eye. By Dr. A. Laskiewitz. (*Allgemeine Wiener Medizin. Zeitung*, March 27, April 10, 17, 24, May 1.)  
 Three cases of Atrophy of the Disc resulting from Hæmorrhage, in one Case from the Stomach, in another from the Nose, and in a third from the Uterus. By Dr. Landesberg. (*Monatsblätter für Augenheilkunde*, March.)  
 A Case of Congenital Ptosis with Absence of the Superior Recti. By Dr. Steinheim. (*Ibid.*)  
 Sympathetic Ophthalmia resulting from the presence of a Wasted Eye, lost by an attack of Gonorrhoeal Ophthalmia. By Dr. Meyhefer. (*Ibid.*)  
 A Case of Congenital Hydrophthalmus affecting both Eyes, with complete absence of the Iris in one Eye. By Dr. Brunhaber. (*Ibid.*)

#### REPORTS OF FOREIGN SOCIETIES.

##### SIXTH CONGRESS OF THE SOCIETY OF GERMAN SURGEONS.

The following abstract of the papers and discussions at the sixth annual meeting of the German Surgical Association, in April, under the presidency of Professor von Langenbeck, is taken from recent numbers of the *Deutsche Medicinische Wochenschrift*.

April 4. Dr. von Langenbeck opened the proceedings with an address, in which he said that the Society might look back with satisfaction on the results of its labours, as shown in the five volumes of its transactions. The presence, also, of many foreign visitors, proved that the Society was recognised beyond the limits of Germany. Unhappily, however, the Society had sustained severe losses through the deaths of several eminent colleagues and celebrated surgeons, among whom Cheius, Stromeyer, Fergusson, and Gustav Simon were especially mentioned. The death of the latter, who was one of the founders of the German Surgical Association, had caused a void which could not easily be filled. During the past year eighteen new members had joined the Society. The total number was 208.

Dr. von Langenbeck was again elected president. Dr. Volkmann, of Halle, moved that the presidency be conferred on him for life. This, however, he declined.

*Resection of Joints.*—Professor Hüter, of Greifswald, read a paper on operations for resection of joints. He did not think that he was in a position yet to bring forward determinate propositions for acceptance, but he hoped that the discussion would elicit new suggestions, and that he himself



would gain instruction from it. The subject of resection was a wide one, but he would limit his observations to the operations on the foot and elbow. The advantages of total or of partial resection must be decided by statistics, regarding which there was still much to be desired. As regarded resections of the ankle-joint, there were two sets of statistics. One set had been furnished by Grossheim, whose numbers, however, were rather small and scarcely sufficient. In 50 total resections he had 20 deaths, or 40 per cent.; and in 47 partial resections, 14 deaths, or 29·8 per cent. Laufs, of Halle, in a dissertation, had given 62 total resections, with 47 recoveries, 12 deaths, and 7 failures; and 37 partial resections, with 21 recoveries, 11 deaths, and 5 failures. The resections described by Laufs were done during peace, and it might, therefore, be rightly assumed that they were performed on account of caries. Hüter was at first opposed to partial resection in military practice, but he had changed his opinion since the introduction of Lister's method of dressing. The danger which formerly lay in the condition of the wound had disappeared, and with it the reason for preferring total resection. Antiseptic treatment and drainage had made the field of operation unspeakably more favourable than was formerly the case. Dr. Hüter then entered on the consideration of the several varieties of resection of the foot. Special care must be taken to provide for the escape of discharges from the wound. He made button-hole openings before and behind the internal malleolus, and introduced drainage-tubes. In regard to resection for caries, he observed that diffuse softening of the articular ends of the bones often tended to recovery, but that circumscribed softening did not do; and no circumscribed diseased portion must be left. His general conclusion as regarded resection of the foot was that partial resection must be generally practised in military surgery, but that great caution was necessary in employing it in caries. Of resection of the elbow-joint, Salzmann, of Helsingfors, had collected 1,217 cases from various sources, and asserted that the mortality after partial resection was the greater, but he gave no figures. Mair, of Munich, gave the following statistics from military practice: partial resection—loose joints, 18·4 per cent.; deaths, 23 per cent.; ankyloses, 12·3 per cent.; total resection—loose joints, 29·8 per cent.; deaths, 16·5 per cent.; ankyloses, 10 per cent. The American surgeon, Otis, who reported on 600 cases of resection after the great war, gave no figures, but stated that the total resections were more successful than the partial. On the other hand, the most recent statistics, collected by Dr. Dominik, gave 23 deaths, or 20·7 per cent., in 111 partial resections; and 67 deaths, or 25 per cent., in 266 total resections. His information with regard to the functional results was very interesting; partial resection appeared to have the advantage, as it was rarely followed by loose joint, and there were nine cases of ankylosis with useful limb. In performing partial resection for caries of the elbow-joint, it was necessary to be careful not to leave circumscribed foci of osteomyelitis. Of five cases of resection of the elbow which he had done during the last year and a half, three were partial, for old injury, and two total for caries. The three partial resections for injury appeared at first to promise success as regarded functional usefulness, but it was afterwards found difficult to obtain active mobility of the limbs. In the two cases of total resection for caries, disease was found during the operation in the olecranon, which had to be removed.

Dr. Hüter advocated total resection in many cases in military practice. He summed up as follows. 1. In cases of injury, partial resection is almost always to be performed. 2. In caries, great caution is necessary in undertaking resection, and a decision as to its results in regard to function has yet to be arrived at.—Professor Gurlt said that his own statistics, founded on a large amount of material, confirmed the statements of Professor Hüter regarding the relative safety of partial resection of the elbow-joint. Taking together the results obtained in 1848, in the American war, in the Schleswig-Holstein war in 1864, the Austrian war in 1866, and the war with France in 1870-71, there were 1,222 resections, with 289 deaths, or 23 per cent. In 493 cases of total resection there were 115 deaths. Total resection had become more frequent than partial resection since 1864. He believed that ankylosis was more frequent in partial resection.—Professor von Langenbeck agreed entirely with Dr. Hüter, especially with regard to resection for injury. In such cases, it was a fundamental proposition that a surgeon could not be too conservative. In cases of disease, on the other hand, he advised the greatest caution, especially against the leaving of carious portions of bone through oversight. In the case of the hip-joint, the principle that had hitherto been followed was to remove as little as possible—only the head of the femur. Lister's method and drainage now afforded the means of preventing the retention of secretions from the wound; and the question arose whether simple removal of the head of the bone was still to be preferred. With regard to the foot, he had obtained the best results from partial resection. Could the astragalus be preserved under the system of drainage? If it could, the form and function of the foot would be preserved; but as yet the attempt had been considered too dangerous, although it was possible that, under the new mode of dressing, the prognosis would be more favourable.—Dr. Volkmann, of Halle, had in late years, in each of 43 cases of resection of the hip-joint, sawn through the bone below the great trochanter. Ankylosis very rarely occurred. The joints were almost always scarcely less movable than in the normal state. Abduction was easily performed, and the limb could be readily flexed on the abdomen. Removal of the head of the bone was more frequently followed by ankylosis. With regard to the tarsus, the antiseptic method had had great influence. He recommended partial resection of the astragalus in cases of injury or of acute or subacute inflammation of the synovial membrane. He operated with a chisel. He did not carry the drainage-tubes across the wound, as they produced unnecessary irritation, but used short tubes, extending as far as the flaps made in the resection.—Dr. Hüter said that Sayre, of New York, sawed through the bone below the great trochanter, and had a mortality of ten per cent. He, however, had hitherto preferred simple removal of the head of the bone. He agreed with Volkmann that ankylosis was very frequent only after pathological processes of long duration. In cases of removal of the head of the bone, however, he had observed excellent mobility of the limb. In operations on the foot he had no objection to leaving the head of the astragalus. He used a transverse drainage-tube only on the first days after the operation, and afterwards short tubes.—Dr. Lücke, of Strassburg, made the removal of the trochanter major dependent only on the adequate escape of the secretions of the wound. In young individuals he only partially removed it.—Dr. Schede, of Friedrichshain, had performed resec-

tion of the hip-joint twelve times during the last year and a half, and in ten of the cases had divided the bone below the great trochanter. This method was, as a rule, necessary for the escape of secretions, for making a thorough examination of the joint, and for the complete removal of the synovial membrane. In certain circumstances, when the trochanter might be considered to be in a normal state, the attempt had been made to perform resection of the hip with a single anterior incision along the inner border of the sartorius and rectus muscles; the capsule of the joint then came into view on drawing the outer border of the iliacus inwards.—Dr. von Langenbeck disapproved of the principle of removing the trochanter major. Most resections of the hip-joint were performed on children, and the growth of the bone was interfered with by dividing it below the trochanter. He was not much prejudiced in favour of long drainage-tubes, but they were often necessary in operations on the hip-joint, and he had even introduced them through the acetabulum into the pelvis.—Dr. Volkmann also used long drainage-tubes in hip cases. He was of opinion that simple removal of the head of the femur had as much influence as the division below the trochanter on the growth of the bone; the femur grew from the lower end. In his cases growth was not arrested, and an useful new joint was more easily obtained by his method, as the sawn surface of the femur, after removal of the trochanter, came into contact with the acetabulum as if it were a new head of the bone.—Dr. Koenig, of Göttingen, spoke in favour of removal of the head of the bone when there was not much contraction or formation of fistulæ. He had, however, seen very good functional results after removal of the trochanter.

*Epithelioma of the Lips and Face.*—Professor Busch, of Bonn, had had about fifty cases of this disease under his care. He adopted the theory of Thiersch, according to which the development of epithelial cancer depends on a disturbance of the balance between the epidermis and the connective tissue. Most cases of epithelioma occurred on the face and lips. The disease always had its origin in a thickening, hard on the surface, and growing downwards, the commencement of which was often overlooked. In chronic cases on the face there was often at first only a horny layer; and, if this were rubbed off, a bleeding surface was left. If it were carefully removed, processes were seen to pass from it into the skin. The surface of the skin beneath was covered with a small layer of epidermis, perforated by the projections just mentioned. This condition was not yet cancer, but a rodent ulcer. The epithelial projection passed further inwards. In many cases there was evidently an irritant cause, often of chemical character. It was a question whether mechanical irritation, such as the pressure of the heavy layer, was in any case the cause of the development of epithelioma. If the heavy masses were loosened with a solution of soda, and the parts diligently washed with the same, the inward spread of the disease was averted, and the epidermis regained its normal character. Volkmann had already proved the favourable influence of cleansing on paraffin-cancer. In senile hypertrophy of the skin, washing was less successful. In Dr. Busch's practice, both when the heavy masses were removed as a prophylactic measure, and after extirpation of an epithelioma, the cicatrix and the surrounding parts were washed with a material capable of dissolving horny matter. He attached much importance to this, as,

in the worst forms of epithelioma of the lips and face it was impossible to say whether the whole of the disease had been removed. He had seen several cases where neglect of the washing led to a rapid renewal of the disease. The same occurred in a case of rodent ulcer of the nose, in which, after a time, the disease returned. In a second case, after removal of an epithelioma, the washings were neglected, and a scab formed on the lip. The washings with soda were again ordered, and were a second time neglected; the disease returned, and extirpation became necessary. In disease of the lips the soda washings were of use only in the first stage; on the other hand, they were more generally useful in rodent ulcer of the face. It was almost beyond doubt that eczema and other skin-diseases were sometimes the commencement of epithelioma, as Sir James Paget had observed. In this sense, the eczema of the nipple in old women was of special importance. Here there was very often observed an accumulation of horny matter, distending the mammary ducts, so that true cancer of the breast might have its origin from this source. He had also seen cancer of the heart developed without anything in the shape of eczema. The disease began with obstruction of the mammary ducts by epithelial masses; and it was evident that, if this obstruction were prevented, the further development of the disease might be arrested. He related a case in which there were thick epidermic deposits on the nipple. After the removal of these by means of a solution of soda, white plugs, consisting of fatty epithelium, could be pressed out of the milk-ducts. The treatment was continued for three months; and, although there had been distinct induration of the breast, so that extirpation was thought of, it gradually disappeared. Dr. Busch related two other cases attended with similar results. This treatment was of course only successful in the early stage of the disease. Dr. Busch summed up as follows. 1. Epithelial cancer commences in many cases as a simple proliferation of the superficial epithelium. 2. In this stage, the disease is curable by persistent washing with solution of soda. 3. In certain favourable cases of superficial cancer of the face this method is successful, even when ulcers are present. 4. In many cases the recurrence of epithelial cancer after extirpation is prevented by alkaline washings of the cicatrix and adjacent parts. 5. It may be useful, as a prophylactic measure, to remove the epithelial deposits which sometimes take place on the breasts of elderly women.

*Percussion of Bones.*—Professor Lücke, of Strasbourg, spoke on percussion of bones. He first employed it in order to ascertain the intensity and the precise situation of pain. Considerable accuracy in this respect may be obtained by means of the percussion-hammer, as the force of the stroke can be more easily increased. Modifications in the direction and force will easily determine whether the pain originates in the parts, or is communicated to them. In acute diseases of bone the tenderness is greatest; it is also very high in cases of central abscess, also of sarcoma and secondary cancer of bone. By the difference of resonance, the condition of the bones may be determined within certain limits. Piörny was acquainted with the difference between the resonance of the soft parts and of bone. Air-containing cavities, such as the frontal sinuses, have long been percussed for diagnostic purposes; as has also the mastoid process by aural surgeons. In the chest, resonance of the bones is superseded by that of the lungs. According to Lücke, all complicating sources



of resonance must be avoided; hence, for example, the limb must not be laid on a table. There is a normal difference in the percussion-sound over the epiphyses and the diaphyses, the epiphysal resonance being higher. This difference is never absent in the living body, although it is wanting in the skeleton. Other differences are also produced by structural changes; thus, there is a hollow sound in osteoporosis, dullness in infiltration of the medullary cavity. In affections of the marrow, in osteomyelitis, abscess, and sclerosis, the resonance is lowest; as it also is when callus is present, probably in consequence of the obstruction of the medullary cavity. Higher resonance is found in osteoporosis. This mode of diagnosis is chiefly useful in determining the situation of central affections of bone. In cases of abscess, new formations, sclerosis, and osteoporosis, percussion enables one more easily to determine the locality of the affection, so that it may be attacked by ignipuncture or trephining. With a little experience, minor differences in the percussion-sound may be detected. Thus in one case there was dullness in the bend of the radius, although there was as yet no swelling of the soft parts; dullness was then detected in the olecranon, and the diagnosis was made that the disease had extended to this part from the head of the radius, where it had commenced. On resection, a cheesy deposit was found in the head of the radius, implicating the olecranon. In another case, of diseased knee, Lücke found dullness over the internal condyle of the femur, with slight tenderness; and from the knee upwards there was greater tenderness, with osteoporotic resonance over the femur. This method of diagnosis requires much experience and a fine power of diagnosis. It is evidently capable of only limited application, as percussion must give a doubtful result when the bones are covered by soft tissues.

*Plastic Surgery of the Mouth.*—Dr. Gussenbauer, of Liège, spoke of a new stomatoplastic procedure for restoring the power of opening the mouth in cases of ankylosis of the jaws. The case on which Dr. Gussenbauer practised his operation was of such a nature, that all the methods as yet described must have failed. A broad flap of skin was raised from the cheek, and substituted for the cicatrised tissue which caused the contraction; the external surface being turned inwards.

*Treatment of Genu Valgum.*—Dr. A. Ogston, of Aberdeen, made a communication on the operative treatment of genu valgum. He considered that the principal cause of this affection was an excessive length of the internal condyle of the femur. It was necessary to keep this in view in operation, and to equalise as far as possible the difference in length of the femoral condyles. This was best done by sawing through the inner condyle subcutaneously. With a long tenotomy knife an opening was made, commencing three or four inches above the most prominent part of the condyle, crossing the upper surface of the condyle obliquely, and ending between the condyles. If the patella were displaced outwards, Adams's subcutaneous saw was introduced, and the condyle was carefully divided until it was separated from the femur to the extent of two-thirds or more; the saw was then removed, the knee was extended, and the condyle broken by forcible abduction of the leg. When the patella had not yet become displaced, it was better to extend the knee before sawing through the condyle. The separated condyle was then pushed upwards, so that it united in a position corresponding to the normal condition

of the joint. Drawings, preparations, and instruments were shown. The success of the operation depended on the use of the antiseptic method.

## IMPERIAL ROYAL MEDICAL SOCIETY OF VIENNA.

March 9. *Sarcoma of the Nose in a Syphilitic Patient.*—Dr. Von Vajda showed a man, aged 24, who had had syphilis three times. Seven months ago, he had a tumour as large as a pigeon's egg on the septum nasi. It was supposed to be a syphilitic gumma, especially as there were nodes on the tibiae, and other indications of syphilis. About two months since (after an absence of two months) the patient returned. The swelling was somewhat smaller, but was covered with numerous fungoid excrescences as large as hempseeds, which bled readily. Careful rhinoscopic examination showed that the tumour was not sharply defined posteriorly; and the microscope showed that its substance consisted of small and large round cells, along with some spindle-cells and giant-cells, with numerous nuclei. Some of these cells had undergone mucous degeneration, like that observed by Wagner and Virchow in gumma. Dr. Von Vajda diagnosed the tumour as a sarcoma; and Dr. Heschl confirmed the diagnosis. He pointed out the difficulties of diagnosis in such cases, and remarked that in gumma the connective tissue elements rarely showed signs of proliferation; also, that in malignant growths the cells, and in gumma the intercellular substance, were the chief seats of mucous degeneration.

*Progressive Paralysis.*—Dr. Svetlin showed a girl, aged 17, suffering from progressive paralysis, producing both psychic and motor disturbance. The right pupil was dilated, the left fixed; the right naso-labial fold was effaced; the tongue was protruded at intervals by twitchings of its fibres; gait was tottering; and the power of both hands, especially the right, was notably weakened. The patient was always merry, laughed constantly, rejoiced in her beautiful eyes, clothes, &c. Her speech was short and hesitating, and there was occasional aphasia. In the course of the illness, she became apathetic and forgetful, the motor disturbance remaining as before. The malady commenced when she was fifteen-and-a-half years old.

*Argyria.*—Dr. Neumann gave an historical sketch of the observations on the effect of administration of nitrate of silver, and described the results of microscopic examination, which he had lately had the opportunity of making. All the cellular organs, the epidermis, the rete Malpighii, the covering of the sweat-gland, the cells of the inner and outer root-sheaths, were quite free from silver. The metal, however, was abundantly deposited in granules in the upper portion of the cutis, also, in a thin layer, in the walls of the sweat-glands, as well as in the connective tissue portion of the hair-follicles, in the sarcolemma of the striated muscles, between the cells of the unstriated muscular fibres, in the neurilemma of the nerves, and in the tunica adventitia, and between the cells of the middle coat of the blood-vessels. The subject was an Italian, aged 50, who had, during 26 years, been in the constant habit of applying nitrate of silver for the removal of enlarged papillae on his tongue. He had observed, when in hospital, that the nitrate was applied to morbid growths. There was distinct coloration of the conjunctiva bulbi, of

the mucous membrane of the mouth, and of the pharynx.

*Traumatic Dislocations in Newly born Infants.*—Dr. Hofmokl, in a paper on this subject, arrived at the conclusion that dislocation of the jaw, shoulder, hip, or elbow, cannot take place in new-born children. In the jaw, the articular tubercle is absent; in the elbow, the lateral ligaments are very strong; and in the shoulder and hip, dislocation is prevented by the manner in which the capsule is inserted into the shaft of the bone.

#### ACADEMY OF MEDICINE IN PARIS.

March 13. *Etiology of Typhoid Fever.*—M. Bouchardat read a paper on typhoid fever, in which he admitted contagion as one of the causes of this disease, as in the eruptive fevers. He classified his arguments under four heads. The first related to the comparative immunity of persons who had had an attack of the disease; the second to the comparative progress of typhoid fever in the great centres of population and in villages; the third to the special morbid proclivity of the unacclimatised, of the new comers; the fourth to the high rate of mortality of the military hospital orderlies, who are always in contact with the sick. The disturbances observed in the intestines, in the first place, led to the opinion that the contagion was contained in the excremental matters, and this hypothesis was justified by remarkable cases of propagation of this disease by faecal matters. But, were not these simple coincidences? The true cause had passed unperceived, and a very apparent, but harmless, condition had been taken for it. The pernicious influence with regard to typhoid fever, of the contents of sewers and cesspools, had not been rigorously established with regard to the men employed in cleansing and emptying them. Because these cases had shown themselves in isolated villages, without perceptible communication with diseased persons, they had been attributed to the drinking of waters containing animal matters in a state of putrefaction; but, besides that these cases were often incompletely observed, it must not be forgotten that small-pox, measles, and scarlatina, also appeared in isolated districts, where it was not possible to follow up their origin, and yet no one admitted the spontaneous evolution of these diseases. Finally, the hypothesis of permanent specific miasmata in great cities was strengthened by the fact that the epidemics which break out in them generally coincide with the large arrival of non-acclimatised persons, as in Paris in 1870. It was this class which were in the greatest danger, and the inhabitants of great cities need not exaggerate to themselves the dangers of typhoid fever at a season of epidemic prevalence.—M. Jaccoud insisted on what he termed the faecal origin of typhoid fever. He said that M. Gueneau de Mussy had relied on a small number of facts, nearly all of English origin, and taken from the same authority, some of which, too, related to localities where typhoid fever was endemic. Greater strictness was necessary in this case, and, to be worth anything, the proof of the faecal origin of typhoid fever ought to be given in the following way. In a locality where typhoid fever was not endemic, where it had not shown itself for at least a year, it suddenly appeared: investigation did not show any unusual noxious modification, except a condition of the cesspools and pipes in sewers, which had either allowed the exhalation of their contents to the external air, its admixture with the

drinking water, or a telluric change which had suddenly brought to the maximum the emanations from excrementitious matters fortuitously accumulated; the suppression of this accidental condition was rapidly followed by the disappearance of the disease. If any facts existed which fulfil this assemblage of conditions, they carried with them irrefragable proof. Such facts were by no means rare; from 1865 to 1875, M. Jaccoud had collected 106, independently of those obtained by M. Guéneau de Mussy, of which 15 related to the direct action of faecal emanations, 74 to the antecedent contamination of the water, and 17 to milk contaminated by water polluted with sewage. These facts, observed in the different countries of Europe and in the United States, strictly fulfilled the requisite conditions, and put the pythogenic influence beyond all contradiction. M. Jaccoud, therefore, agreed with both M. Gueneau de Mussy and M. Bouley.

*Autositic and Monomphalic Monsters.*—M. Blot read a report, by MM. Millet and Marquézy, on two autositic and monomphalic monsters of the sternopagic species. They were two foetuses of the feminine sex, born in the eighth month. To judge by the external aspect, these two children seemed to be united face to face, from the umbilicus, which was single, to the upper portion of the chest. The sternum of each was divided in the median line, and the halves thrown back laterally; those two halves, thus placed outside the median line common to both individuals, met the two similarly arranged halves of the sternum of the other subject, and became united to them. Fusion of the two thoracic cavities resulted from this arrangement. The organs of the posterior region of the chest were but little modified; there were two pairs of lungs. The two pericardia, however, were confused into an immense single pericardium, and a similarly single heart extended from one sternum to the other. The thorax was separated from the abdomen by a double diaphragm, above which was placed a similarly double liver. The other abdominal viscera did not show any abnormal appearances. The limbs and the head were normally formed. The woman who gave birth to this monster was 42 years old, and had had five children, of whom four were alive. In the eighth month of her sixth pregnancy, which was a troublesome one, she had a fall, after which labour pains came on, and lasted a day. There was presentation of the pelvic extremity, an ordinary but somewhat protracted delivery; an enormous placenta was expelled two minutes afterwards. One of these two female children was still living after the expulsion of the feet, according to the statement of the accoucheurs, who rely on the mother's assertion that she felt it move. This was different from what had hitherto been observed in sternopagia, in which the non-viability was explained by the communication of the hearts.

#### ACADEMY OF SCIENCES IN PARIS.

Feb. 5. *Fuchsine.*—MM. Feltz and Ritter forwarded a note on the immediate results of injection of pure fuchsine into the blood. The writers, in the first instance, explained the production of the temporary intoxication which followed the injection of a solution of fuchsine, by the augmentation of the blood-pressure, or by embolism. But comparative experiments had proved to them that this accident was solely produced by the fuchsine itself.

*Fermentation.*—Dr. Charlton Bastian replied to M. Pasteur that he was able to produce fermentation



in sterile urine by adding to it liquid potash, heated to 110° cent. (230 Fahr.) during twenty minutes, or to 130° cent. (266 Fahr.) during five minutes.

*Salts of Copper.*—M. Bergeron communicated a note on the poisonous properties of salts of copper, and maintained, in contradiction to the assertions of M. Galippe, that these salts are poisonous, and may cause death.

Feb. 19. *Salts of Copper.*—M. Rabureau communicated the results of the estimation of copper in the liver of a woman who had died of acute tuberculosis, having taken in 122 days 43 grammes of ammoniacal sulphate of copper. The liver contained nearly 24 centigrammes of copper, or 16 centigrammes to the 1,000 grammes.

Feb. 26. *Ophthalmia.*—M. Charles Brame read a paper on the different kinds of ophthalmia. He divided them into two categories, both requiring the same treatment by nascent or recently prepared iodide of silver. Faradisation applied to the temples gave good results in three cases.

*Sulphate of Copper.*—MM. Feltz and Ritter read a note on acute poisoning by sulphate of copper. The result of their experiments was that the action of sulphate of copper was not fatal; death only supervened when the vomiting was not rapid and energetic, and in these cases the doses must be so powerful that no one would swallow them of his own accord.

*Bromides.*—M. Vutzeys reminded the Academy that he had made known the anæsthetic properties of the bromides of ethyl, of normal propyl, and of amyl, before M. Rabuteau. His paper was presented to the Royal Academy of Belgium on Aug. 5, 1876.

March 5. *Vaccinal Immunity.*—M. Maurice Raynaud communicated his researches on the part played by the blood in the transmission of vaccinal immunity. A first series of experiments had shown him that the inoculation of the blood of a vacciferous child into another child did not produce either pustule or vaccinal immunity. But, having performed transfusion of blood from a heifer, he had found, by ulterior vaccinations, that, without eruption or elevation of the temperature, there is complete immunity.

*Cancer.*—M. Eugène Curie described the good effects which he alleged that he had obtained by the employment of acetic acid and the acetates in the treatment of cancers of the breast, uterus, and stomach.

*Bromide of Ethyl.*—M. Rabuteau, in reply to M. Vutzeys' claim of priority with regard to bromide of ethyl, stated that he communicated some results of his researches to the Society of Biology on Feb. 19, 1876, that is to say, some months before M. Vutzeys made his communication to the Academy of Belgium.

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## REVIEWS.

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*A Course of Practical Histology*, by EDWARD ALBERT SCHÄFER, Assistant Professor of Physiology in University College, London, 8vo. pp. 276, with woodcuts. London: Smith, Elder and Co., 1877.

This book, which it is hoped will soon be in the hands of every student of practical histology, contains in 270 pages a concise description of the more modern methods—many of them with important modifications—used in studying and examining the

tissues of the higher animals. Everyone who has some experience in teaching histology, will, after careful perusal of this volume, readily admit that it completely fulfils the author's purpose "to afford to those engaged in the practical study of histology, plain and intelligible directions for the suitable preparation of animal tissues."—(Preface).

After having made the student acquainted with the principal parts of the compound microscope, the dissecting microscope, and the instruments necessary for ordinary manipulations, *e.g.*, forceps, scissors, &c., and after having stated a short but important series of "golden rules" as regards microscopic work in general, the author begins the subject proper with the examination of blood.

We recommend to the attention of the student what the author says on p. 5 (and which we readily endorse), viz., "The mechanical stage movement, which is so often fitted to microscopes of English construction, and other appliances which tend to mar the perfect simplicity of the instrument, serve rather to detract from its usefulness for purposes of histology."

In Chapter I the student is introduced into the study of the morphological and physiological characters of the formed elements of the blood. In twenty-two preparations, prepared and observed according to the directions laid down in this chapter, the student learns all that is of importance to know about colourless and coloured blood-corpuscles; their appearances in fresh specimens, after treatment with heat, acids, alkalies, different gases, electricity, &c. In the last three specimens the mode of preparing the different crystals obtainable from the colouring matter of blood is described.

Mr. Schäfer seems to be unaware (p. 32) that pigment and other insoluble articles are capable of passing through the coats of the blood-vessels in the living animal, without being carried by the white corpuscles.

On preparation twenty-one (p. 40), we would observe that hæmoglobin-crystals *will keep* unaltered for any length of time, if, after absolute alcohol, they be treated with oil of cloves, and then mounted in Canadian balsam solution; and regarding preparation twenty-two (p. 41), we remark that the method recommended for showing hæmin-crystals is not followed invariably by success.

Epithelial tissues are studied in Chapter II in thirteen, and connective tissue (Chapter III) in nineteen preparations. Although there are in these two chapters several statements which we believe the author will in time alter, still we think the student will find the study of these two tissues easy and remunerative by following the author's directions.

Chapter IV discusses the study of cartilage (in twelve preparations), and Chapter V that of bone (in twelve preparations), its structure, development and growth.

Chapter VI treats of muscular tissue. The study of striped muscle-tissue is very detailed and complete. It is, we think, a pity that the author disapproves of hardening fresh muscle-tissue (especially of insects), with alcohol, and mounting it afterwards in Canada balsam.

Chapter VII on nerves, seems but to be capable of considerable improvement, in order to raise it to the same degree of perfection as the preceding chapters, both as regards methods and structural appearances.

Chapter VIII—on blood-vessels—is of special value, describing, besides the methods for study-

ing their structure, also those for embedding cutting sections, mounting them as permanent specimens, then those for observing the circulation, and last, not least, the artificial injection of blood-vessels. This chapter would have been perfect had the author thought it advisable to describe in a short appendix the methods for "natural injections" used in recent studies on the function of intercellular substance of epithelium and endothelium (Thoma, Arnold, Küttner, &c.) and of the secretory passages of the liver and kidney (Chrzonszczewsky, Heidenhain, and others).

Chapter IX demonstrates the lymphatics and serous membranes; the methods for studying their epithelium and stomata are minutely described. The injection of lymphatic vessels with colouring matter is discussed in detail, and many valuable directions are given to the student. The lymphatic glands are not treated by the author with his usual thoroughness, for the method which is recommended is certainly not the one by which their structure can be completely made out, and hence it is intelligible why the author says (p. 163), "these organs are amongst the most difficult to demonstrate the structure of satisfactorily." In Chapter X, we find the most useful methods of studying the skin, hairs, and nails; in Chapter XI, those for the heart in all its parts—a most valuable chapter; and in Chapter XII, those for the lungs, larynx, and trachea.

The next four Chapters, XIII, XIV, XV, and XVI, describe the methods for the study of the alimentary canal and its glands. The stomach and liver are treated with great detail. The more modern methods for the investigation of the spleen, urinary and generative organs, are described in Chapters XVII and XVIII. We miss the method of monochrome of potash, so important in the study of the kidney, and likewise the natural injection of urinary tubes.

Chapter XIX records shortly a few of the methods for the examination of the nervous system, the brain, and spinal cord.

Chapter XX is very exhaustive on the study of the eye; a very detailed account is given of the mode of preparing the cornea—the great favourite of histologists, the lens, and the retina.

Chapter XXI finishes the series with the ear, olfactory, and gustatory organ.

In an appendix, the method of measuring and drawing microscopic objects, the mode of counting blood-corpuscles with the aid of Malassez's apparatus, and several microtomes, receive a short but fair treatment. The description of the use of a microphotographic apparatus, and of the employment of eosin—an aniline dye new for histological purposes—concludes the volume, which, no doubt, deserves a prominent place amongst the numerous contributions of the author to histological literature, as well as amongst similar books that have been published in recent years.

E. KLEIN, M.D.

*On the Weather at Cannes during the Season 1875-6. Meteorological Observations, with Remarks.* By W. MARCET, M.D., F.R.S. 8vo., pp. 31. London: Longmans, 1877.

We are much indebted to Dr. Marcet for the careful meteorological observations he is making in the Riviera. Although the present brochure embraces the results of only two winter seasons at Cannes, that is from November to April inclusive, yet, as the author observes, it affords valuable data, to be used

hereafter, towards establishing the climate of that place.

The following are a few of the most interesting conclusions. In the last four years (including two years' observations at Nice) the monthly number of fine days has averaged about twenty; the monthly number of rainy days about eight. The mean number of fine days is nearly the same in every month of the season; March and January including the greatest number of them, while April and December exhibit the largest number of rainy days. As regards temperature, the mean temperature at Cannes at 9 a.m. exceeded that of Kew at 10 a.m. by about 9.45 deg. The mean maximum temperature of Cannes exceeded that of Kew by 10.3 deg., and in one month, January, it was 12.4 deg. in favour of the southern station. The mean minimum temperature of Cannes was about 8.3 deg. above that of Kew. As to relative humidity of air, there is a dryness, as compared with Kew, of 12.5 deg. in favour of Cannes.

On the subject of the prevailing winds, which is fully treated of, we find the following observations about the mistral and the east winds.

The mistral is a north-west wind (though it blows occasionally from the west or south-west), varying from strong to a gale, always attended with a fall of the barometer, and, as a rule, very dry. With respect to the influence of the mistral upon health, persons subject to rheumatic pains, or inclined to hysteria, with a feeble circulation, may feel a temporary return of their ailment when this wind blows; some even say that they can feel the mistral coming. Dr. Marcet does not think that in sheltered situations persons suffering from pulmonary affections are the worse for that wind, although the extreme dryness of the air may prove objectionable in bronchitis, and in affections of the throat. After continued dry weather the throat becomes irritable, and a day's rain is a great relief. Of course, the dust blowing about in the air is an additional evil.

Still, the mistral or dry westerly wind is not so uncomfortable as the easterly when it blows hard, whether from the north-east, east, or south-east. This is a damp wind, feeling cold and chilly, and usually the forerunner of wet weather. Thus, if on a fine clear morning the wind should blow steadily from an easterly direction, the sky will, probably, be obscured, early in the afternoon, with dark clouds, and rain will soon follow. On the other hand, heavy dark clouds in the west, in the morning or about noon, are pretty sure to vanish in the evening, if the wind is at all from the west.

Dr. Marcet made some experiments on the temperature of the surface of the sea, which was found to be pretty uniform, giving the same results in two successive seasons. On the whole, the mean temperature of the surface of the sea exceeded the mean minimum temperature of Cannes by 12 deg. It follows that the temperature of the air near the Mediterranean must derive a considerable accession of heat throughout the winter from that which is stored up in the water during summer. In his remarks on the radiation of heat after sunset, Dr. Marcet alludes to the artificial production of ice during the night in India, and thinks it necessary to say that he had the particulars from a gentleman who had observed the process as carried on at Hooghly. We believe that for the last quarter of a century ice has no longer been made at Hooghly; secondly, because all the ordinary scientific works of the last century describe the Indian method of making ice.



*On Athetosis and Posthemiplegic Disorders of Movement.* By W. R. GOWERS, M.D. Reprinted from Vol. LIX of the *Medico-Chirurgical Transactions*. London: 1876.

Puzzling variety is, perhaps, the leading feature of the clinical group discussed by Dr. Gowers in this pamphlet. None of the posthemiplegic motor irregularities are very common; some are rare. This circumstance alone renders their systematic study somewhat laborious; it makes us the more thankful for so much information conveyed in a few pages.

As a clinical novelty, athetosis takes a prominent place in Dr. Gowers' short account. This form of spasm, hitherto observed chiefly in the muscles of the hand and of the forearm, differs from all others in its slow, regular, and continuous character, and in its never ceasing, excepting when the limb is supported, or during sleep. It was first introduced to medical notice by Dr. Hammond, who looked upon it as an independent affection. Dr. Gowers expresses a doubt as to the propriety of thus isolating it; he would rather give it a place among the class of post-hemiplegic slow mobile spasms. The instance which he brings forward was clearly traceable to prior hemiplegia; whilst unilateral numbness of the body preceded the affections in one of Dr. Hammond's cases. In each of the few instances which have been recorded, the spasm, although usually constant, was capable of being arrested by voluntary effort at certain stages of its evolution, namely, in the position of extreme flexion or of extreme extension of the fingers. The possibility of such an arrest would appear to remove any essential distinction between athetosis and slow mobile spasm.

Disorders of movement are noticed by the author to be more frequent in the upper extremities than in the lower. Among other muscles, the interossei are especially liable to spasmodic action. All spasms, whether posthemiplegic or not (all, according to Dr. Gowers, may have an independent origin, although most common after hemiplegia), are capable of being influenced in their extent and duration by various factors. The most important influencing agents are voluntary effort, attention directed to the limb, and change of temperature. No definite law appears to regulate the conditions of sensibility of the part affected, the nutrition of the over-acting muscles or their electrical reactions.

Dr. Gowers rejects the view that spinal lesion is at the root of the evil. With Hammond and with Charcot, he holds the cerebral ganglia responsible: nor is this opinion the result of clinical considerations alone; in one instance it was confirmed by *post mortem* appearances. The lesion is supposed to be of embolic origin in most cases, but never sufficiently severe to abolish voluntary power of movement. Complete paresis may, on the other hand, accompany the condition termed late rigidity. This affection is sufficiently distinguished from the rigidity seen in posthemiplegic spasms, by the fact that in the former the long flexors, in the latter the interossei, are usually concerned.

In each of the 18 cases related by the author, some striking peculiarity comes to light. This diversity constitutes one great difficulty to be encountered in classifying the posthemiplegic disorders of movement. The classification proposed by Dr. Gowers is based upon certain characters of the abnormal movements. Until pathological anatomy can provide better foundations to build upon, it will be wise to follow this rough symptomatic nomenclature. One of its

advantages will be to promote uniformity in description, and thus to prepare ready materials for the elaboration of a more perfect system.

The illustrations appended facilitate a thorough understanding of the written descriptions. The pamphlet is throughout a model of fine analysis. Its perusal cannot fail to be instructive to all, as well as interesting.

WM. EWART, M.B.

*Haupt Momento in der Geschichtlichen Entwicklung der Medicinischen Therapie.* Von Dr. JUL. PETERSEN. Kopenhagen. 1877.

This is something more than a history of medicine, something altogether different from a chronological account of the principal professors of the healing art, their doctrines and their methods of practice; it is a critical representation of the historical development of medicine. Dr. Petersen sees very clearly that medical doctrines conform to general evolutionary laws; like organic forms, they have tended to vary in the directions of least resistance as the circumstances of each age, the temper of men's minds at different times, have allowed. There have been two great tendencies working throughout, the first being the tendency to set out with one or more dogmatic propositions; the second asserts nothing but attempts to found all upon experience. Dr. Petersen considers the dogmatic tendency in four chapters, under the heads of Mysticism, Teleology, Methods, and Chemistry. Under the head of Mysticism he analyses and describes magic, miracles, animal magnetism, homœopathy, and concludes the chapter by some sensible remarks on the real side of mysticism, and the influence of mind on body, and their relations to modern medicine. Teleology, he tells us, is closely allied to mysticism; he discusses the natural philosophy of Plato, its basis in fact, the doctrine of *vis medicatrix nature*, the doctrines of Hippocrates, Galen, Paracelsus, Stahl, Sydenham, the Montpellier School, Schönlein and Solidism, Andral and Gavarret's Humoralism, and the physicism of the Vienna School. "This school has taught us to trust in the natural forces with which Providence has provided us, and has given us encouragement in all the precarious relations, all the uncertainty which surround our practice; and above all, as a main principle, bids us hold fast the doctrine that we must individualise in our treatment, not diseases, but patients." Methods are connected, he says, with ideal physicism, and are of universal nature and philosophical origin. He passes in review Asclepiades and his system, Themison's pathology and therapeutics, Aurelianus, the ultra-mechanical school, Boërhaave, Hoffman, Cullen, Brown, Rasori, Broussais, and Bouillaud, etc., criticising and analysing the doctrines of each. "We are not," he says, "at the end of the chapter, altogether free from this tendency, although in a great measure emancipated; we see it cropping up in hydropathy and gymnastics; such a tendency is doubly dangerous, as it hides within itself a deeply rooted mysticism." Chemistry has analogies with Methodism; it originated in Alchemy and the doctrines of Paracelsus. He criticises the teachings of Van Helmont, Sylvius de la Boe, Bontekoe, the English and Vienna schools, and modern chemical doctrines, such as those of Liebig and the French hæmatology, which reached such excessive development in Vienna under Rokitansky. The latter resulted in abstinence from all treatment. "Only Nature can cure, is the highest groundwork of

practical medicine," said Dietl, one of Rokitansky's most gifted pupils. Theoretical chemistry led to practical nihilism. The next chapter describes the Empirical standpoint. He defends the term Empiricism, and points out the abuse of the word to signify ignorant pretension and quackery: he quotes vaccination as the result of the pure empirical method; he criticises the Greek Empirics with their tripod, Observation, Analogy, and Historical Data, resulting in scepticism. Scepticism, indeed, was the usual result of Empiricism till the writings of Bacon and the application of his method of reasoning gave it some firm foothold. Dr. Petersen asserts in this place the independence of therapeutics upon theoretical medicine, and declares that in Bacon's inductive method this independence "possesses its supports, its elucidation, and its justification." The discovery of the circulation of the blood, and the introduction of the inductive method into medicine, bore fruit in the teachings of Zimmerman, but unfortunately Zimmerman drifted into mysticism with notions about in-born medical genius, and made comparisons between physicians and poets as born, not made. "Through no reading, no labour," says he, "no practice, can the physician attain to this genius, if the aptitude thereto does not exist in his organisation." At the end of the 18th century, Cabanis, a kindred spirit, in his work, *Du degré de certitude de la Médecine*, while attempting to establish the reality of medicine on a firm basis, apologised for it by giving five reasons for its uncertainty: "first, the endless and complicated variations in the phenomena of diseases; second, our ignorance of etiology, and of the precise nature and action of therapeutic means; third, the confounding of *post hoc* and *propter hoc*; fourth, the disputes between different medical doctrines; and, fifth, that, were medicine ever so complete and forward, and had as solid a groundwork as other practical sciences, its practice demands so many personal qualities, such as intelligence, accuracy, attention, and moral superiority, that only few could practise it, while for the same reason it places weapons in the hands of ignorance and quackery." Not indeed a very hopeful prospect for empirical medicine. The next chapter discusses the influence of pathological anatomy on therapeutics, especially the standpoint of Louis and the French school, in their attempts to form a positive basis for medicine by the use of the statistical method; the influence of pathological anatomy on local treatment; the discovery of stethoscopy and its development by Skoda, with its consequent scepticism; the influence of homœopathy, the doctrine of nature's healing power, and the alternative, Art or Science. The following chapter finds physiology beginning to react upon therapeutics, and by the genius of Magendie the experimental method becomes applicable to the elucidation of these problems; there seems a prospect of therapeutics becoming rational; but a reaction occurred against the anatomical ontology, followed by a return to general therapeutics. This chapter is too long to do justice to in the space at command; he reviews the influence of the writings of Müller, Wunderlich, Griesinger, Henle, the contests between rationalism and empiricism, and the final compromise, Richter's organic and rational Empiricism, Virchow's Empiricism, the English and French schools, the results of rationalism, as for instance in the use of baths and the treatment of diseases associated with abnormal waste of any substance by administering the same substance, as, for instance, phosphorus in nervous

diseases; this Dr. Petersen calls compensatory therapeutics.

The last chapter is devoted to our own time, which the reform fever and radicalism, the stringent use of induction logic, and the writings of Stuart Mill and Bain, have made a marked period. Therapeutic statistics and rationalism have been much in favour. The introduction of thermometry has given a new direction to the treatment of fevers. Increased temperature became to many the essential disease, of which Jurgensen's cold bath treatment of pneumonia is an example. When Bouchut heard of Jurgensen's proceedings, he exclaimed, "God preserve me from having pneumonia in Kiel!" and the fatal collapse which occurred in some of Jurgensen's cases seems to justify his prayer. Very noticeable in our times is the improved dietary for the sick and the attention paid to prophylaxis and hygiene. The book ends with a programme for the future of medicine, and a rather alarming description of the physician of the future, quoted from a book by the Swiss author, Sonderegger. "Whoever in knowledge of natural phenomena, in mind and character, is a model man, he is the physician as he will be." "There is on earth nothing greater and more beautiful than man; he is the hardest and most difficult exercise for thought and hands; his birth and death, his life and his afflictions, all are in the highest sense remarkable and impressive. Sharp eyes and delicate ears must thou bring with thee, great talents of observation and patience, and further patience to learn endlessly, a clear critical head, with iron will, which strengthens in need, and yet a warm sympathetic heart that shares and feels every woe; the support of religion and moral earnestness which rise above worldliness, gold, and fame, added to a pleasant address, suavity in discourse, and proportion in thy fingers, health of body and soul, all this must thou have if thou wouldst not be an unfortunate or a bad physician; thou must bear the camel-load of omniscience, and preserve the freshness of the poet. Thou must counterbalance all the arts of quackery, and thereby remain an honest man; medicine must, to this all tends, be thy religion, thy politics, thy misery, and thy joy." "Wherefore advise no man to become a physician! Should he wish it, warn him off forcibly and earnestly; but wishes he notwithstanding, then give him thy blessing, inasmuch as it is something worth; he can use it."

The book is pleasantly written, and we regret that it is not in English; as it is, those who understand German will find it a very readable volume.

*The Journal of Nervous and Mental Disease.* Edited by Dr. JEWELL and Dr. BANNISTER, of Chicago; Dr. HAMMOND, of New York; Dr. WEIR MITCHELL, of Philadelphia; and Dr. EDWARD CLARK, of Boston, U.S.

This is our old friend, umqwhile of Chicago, who, bursting from provincial bonds, has become quite cosmopolitan. According to its own account, p. 135, "The *Journal* will, if possible, seek more distinctively than ever, as far as its space will permit, to become an exponent of all that pertains to the nervous system, whether in health or disease. It is not intended to exclude from its pages articles in psychology proper, or insanity, or in medico-legal questions, involving insanity or nervous disease, or in nervous and mental hygiene. With such a plan, with such means at our command, and with a credit-



able history behind it, we hope for, and expect, a liberal patronage from thoughtful members of the profession," &c.

Certainly the new quintet of editors are quite right in taking credit for a creditable history behind, and they have our hearty good wishes for a development in front. That is to say, in the future, fuller and larger even than they seem to anticipate. But we are none the less sorry to part with our old provincial friend, and we should, perhaps, be able to foretell a better future if our sympathies were more intimately engaged in the new objects of the *Journal*; and if it were intended merely not to exclude psychology proper, and insanity, but to encourage their admission. Psychology proper, and insanity, are not excluded from the pages of any medical journal we wot of, and they certainly are very slightly represented in the four numbers for the past year of *The Journal of Nervous and Mental (?) Disease*.

Would it not have been better to have called this publication simply "The Journal of Neurology," as the organ of the New York Neurological Society, and the "exponent of all that pertains to the nervous system?" But what does this *all* include? Does it not include stomach and blood-vessels to nourish the nerves, a skin to cover them, and a skeleton to hang them upon? What, indeed, does it not include, and what is there which does not pertain to the nervous system of man?

The first paper, and perhaps the most important one of the year, is the inaugural address of Dr. Hammond, as President of the New York Neurological Society, on "The Brain not the Sole Organ of the Mind." It fairly bristles with learning, but the real question at issue is avoided, namely, what you will agree to call the mind, and whether it shall be the mind of a man or of a frog. If Dr. Hammond intends us to consider by "the mental faculties, perception and volition, sealed in the spinal cord," conscious perception and conscious volition of man, we must beg to differ from him. The frog, indeed, makes certain movements which suggest consciousness after its brain has been separated, and other living organisms make analogous movements when the nervous system has been ventilated to a still greater extent; but the evidence is entirely wanting that a man is capable of conscious perception or volition when he has in any way totally lost the use of the encephalon. The paper is a good example of what neurology is likely to become, separated from the wider sphere of physiology and psychology.

"Syphilis of the Nervous System," by Dr. Taylor, is a practical paper of some value. It is remarkable, however, that the febrile symptoms in the interesting cases given, are not less important than the nervous ones. "The Pathology of Tetanus" comes nearer to the standpoint of the publication; but even a case of tetanus, as recorded by Dr. Bannister in his lucid and honest fashion, is a drama in which the whole system takes part; the nerves may be the great character, but, like Hamlet, they can neither be left out, nor picked out, without spoiling all sense and cohesion.

A remarkable paper is contributed to the April number, by Dr. Goodwillie, on "Lesions of the Trifacial from Diseases of the Dental Organs." After cases from neuralgia, from irritated or exposed dental pulps, follow some curious cases of neuralgia from bony deposits in the pulp, not exposed, and catalepsy, from polypoid growth in the pulp, interesting to dentists.

Dr. Shaw's paper on "Intra-ocular Circulation"

tends mainly to show that considerable cerebral hyperæmia may exist without the same condition of the fundus. Quinia produces injection of the membrana tympani, and other undoubted symptoms of cerebral hyperæmia, while the ophthalmoscope does not display a similar condition of the intra-ocular circulation; from which the author deduces the conclusion that we can expect little aid from ophthalmoscopic appearances in the diagnosis of the simple functional diseases of the brain—that is durations from a normal circulation. If the circulation in the eye were not independent of the circulation in the brain, the frequent vacillations in the mental state would, he thinks, interfere with perfect unvarying vision.

The second article in the July number is on "The Physiology of the Respiratory Apparatus," and the leading article in the October number, by Dr. Bannister, is on "Progressive Facial Hemiatrophy," and of the remaining papers the majority are translations from foreign journals. These are strong indications of the heavy task which the editors have undertaken, that is, a quarterly journal on matters which pertain to the nervous system. A Journal of Visceral Disease, or a Journal of Vascular Disease, would have an equally good *raison d'être*. Certain classes of disease, or, rather, the treatment of certain diseased organisms, do fall almost unavoidably into specialisms. The character of mental diseases, and the laws which regard lunatics, render such a specialism inevitable. Diseases of organs which require the most delicate surgery, as of the eye and the ear, and perhaps also diseases of women, are passable specialisms; but to separate the consideration of diseases of the nervous system from diseases of the organism at large, appears to be a backward, instead of a forward, movement in medical journalism, and one which we do not think will succeed and prosper for any length of time upon the narrow standpoint chosen. Almost all diseases may, indeed, be looked at from the neural point of view, and we anticipate that this development will take place in the *Journal* under notice. The neurological aspects of all disease may, perhaps, justify separate consideration, but a journal of nervous disease is foredoomed to outgrow its swaddling clothes, or to shrink into the atrophy of empiricism.

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*Collección de Artículos y Observaciones Clínicas, sobre varias Enfermedades de los Ojos, seguida de una Memoria sobre el Oftalmoscopio.* Por el Dr. D. LUIS CARRERAS Y ARAGO, Professor libre de Oftalmología, &c. Barcelona. 1875.

In this volume the author has collected together a series of papers, some of which have previously seen the light in the Spanish medical periodicals, and others appear for the first time. They embrace some of the most important subjects in the domain of ophthalmology, and are written in a clear, unpretentious style, for the service of the medical profession generally. They are not on this account wanting in interest for specialists, for they expose the practice of an oculist who is evidently familiar with the works of the great European teachers, and has profited by their precepts. The papers most deserving attention are those upon ophthalmia neonatorum, syphilitic iritis, enucleation of the globe for sympathetic ophthalmia, and moist heat in the treatment of some affections of the eye.

Respecting that interesting question, the causes of ophthalmia neonatorum, Dr. Carreras is of opinion

that the majority of cases depend upon a discharge from the genitals of the mother, and sometimes he has had direct evidence of syphilis.

There are also some customs peculiar to Spain which contribute to the production of this disease. Such is the practice of the midwives of washing the newly born child in spirituous liquids, by which means, unless care be taken, a mixture of alcohol with mucous and serous secretions is apt to be brought into contact with the conjunctiva. The practice of having the child baptised publicly when two or three days old, and that of taking it, before twenty-four hours old, to the house of the registrar, by exposing it to variations of weather and temperature, are also undoubted causes.

In treatment, the abortive method is strongly recommended. The nitrate of silver in solution or in stick, fused with nitrate of potass, together with collyria of borax and alum, are the forms specially enjoined.

Syphilitic iritis is briefly but well described, and an active mercurial treatment is insisted upon. In these lighter cases, the administration of calomel in small but frequent doses is recommended: in the more severe, inunctions are advised in addition.

The grave importance of sympathetic ophthalmia is fully appreciated, and the early enucleation of the diseased eye as a means of arresting the malady is enforced in vigorous terms. The author is evidently well acquainted with the observations of writers on the subject; and whilst he recognises the theory of the transmission of the affection from one eye to the other by means of the ciliary nerves, he has no suggestion to offer as to the exact share taken in the process by the different sets of fibres of which these nerves are composed; nor does he propose any method of treatment which shall take the place of the effectual, but perhaps too radical, operation of enucleation.

The paper upon the use of warm fomentations is decidedly the best in the volume. It is distinguished by a sound comprehension of the pathological conditions existing in the asthenic forms of inflammation of the ocular tissues, and offers a trustworthy guide for the use of heat and moisture as means of relief. In affections of the eyelids, and of the conjunctiva, Dr. Carreras thinks the use of warm fomentations inadvisable. In inflammation of the lachrymal sac, he strongly approves their use. It is, however, in corneal inflammations under asthenic conditions that he most insists upon beneficial action. Here, following the lead of Von Graefe, Wecker, and Saemisch, he describes carefully the varying indications of danger, and gives sound practical rules for treatment.

Dr. Carreras also includes in his volume reports of the Ophthalmological Congresses held in Paris in 1867, and in London in 1872.

In each he describes very concisely the contributions and incidents most worthy of notice. In his report of the London Congress, he speaks in very flattering terms of his English *confères* and their reception of visitors. And his tone is seen to be the more cordial, since he is not prevented from censuring what he conceives, justly we think, to be an abuse in our hospital practice, viz., the wholesale administration of anæsthetics for comparatively trivial operations. It is impossible not to recognise the fitness of this rebuke. If only care be taken in operating, at least three-fifths of the eye-cases now anæsthetised may be successfully dealt with, without submitting them to the serious risks which anæs-

thesia involves. Excepting in the cases of children and nervous persons wanting in self-control, where the surgeon is not sure of his patient, and in some instances where the surgeon may not be sure of himself, only prolonged and very painful operations really necessitate anæsthesia.

Taken as a whole, the volume shows no evidences of original research; still it merits the rank of a valuable contribution to the literature of ophthalmology, for it is the work of a well-trained observer, who is fairly abreast with the scientific knowledge of the day, and has, in addition, a fortunate aptitude in conveying to others the conclusions derived from his knowledge and experience.

LLOYD OWEN.

*Diagnose und Therapie der Krankheiten des Menschen.* Von Dr. BERNARD KRAUS. Vienna. 1877.

An endeavour to give an account of all the diseases incident to the human body, including medicine, surgery, gynaecology, aural and ophthalmic surgery, and the diseases of children, as well as 1500 prescriptions, and an account of the principal mineral springs of Europe, all within the compass of 970 pages small octavo, disarms criticism. If cerebral hyperæmia can be allowed only nineteen lines, and apoplexy little more than half a page, it seems unreasonable to make any objections on the score of omissions. Probably it is from the universality of the law, deduced from the impossibility of putting a quart of ale into a pint pot, that stenosis and insufficiency of the valves of the heart are treated of as if they always occurred together, and that for the etiology of cirrhosis of the liver we only get the abuse of alcoholic drinks. There are, however, faults of commission not so easily excused; for instance, chronic parenchymatous nephritis is said to be only seldom the result of acute nephritis, while the abuse of alcohol, long-standing suppuration, caries, and necrosis, various dyscrasias, malarious infection, and mercurialism are assigned as frequent causes. It might be thought, perhaps, that granular and amyloid kidney-affections were here included, but that is not so; they, as well as fatty degeneration, are described separately. The author says in his preface that "it has always been and remains his chief endeavour in all his publications to give practitioners and all who are concerned in the progress of medical knowledge the means to hand, to make the practice of medicine as easy as possible, without falling into the unsystematic, incomplete, and barbarous huddling together of heterogeneous medical fragments which occurs in most similar works." The book is arranged systematically on an anatomical basis, is well indexed, and its list of diseases is very complete, but we cannot see the use of such books; no one can read them; they are not full enough to be trustworthy references, and even for cramming purposes are scarcely safe. The present volume would not serve to guide a busy practitioner to a diagnosis of a given case, as the symptoms are strung together, with very few hints as to their relative importance, and no diagnostic points of distinction. The book does not read like the work of a practical man.



## NEW INVENTIONS.

## MESSRS. FERRIS, BOORNE, &amp; CO.'S SPECIAL AND GENERAL PREPARATIONS.

Some months since, we handed over to a gentleman, engaged in public and private general practice, several preparations manufactured by Messrs. Ferris and Co.; and he reports as follows.

I have prescribed many of the preparations you were so good as to send me, not only the new medicines, such as concentrated infusion of coca, tincture of guarana, liquor bismuthi c. aromat., &c., but also many of the old established remedial agents manufactured by this firm. I would particularly recommend their liquor bismuthi c. aromat.; for I have administered it frequently in the sickness of pregnancy, cardialgia, and sundry nondescript abdominal pains, with marked benefit. Their ext. zingiberis fluidum, U.S.P., retains the characteristic flavour and pungency of the best powdered root in a marked degree; similarly, the extractum belladonnæ fluidum and extractum hyoscyami fluidum are admirable preparations, and would prove most useful in country surgeries, where economy of time and labour in dispensing are requisite, as they are readily miscible with other medicines, and the dose can be graduated with the utmost nicety and certainty; and by the method of preparation they are apparently unchangeable, several of them having been in my possession for many months without deposit or visible alteration.

Among their more special preparations, I have used with marked results their anodyne amyl colloid as a topical application in neuralgia and muscular rheumatism. Their liquor vesicatorius is a certain vesicant; their glycerole of nepenthe is well adapted for subcutaneous injection, &c. Their solution of chloral-hydrate and camphor I have also found very valuable in toothache and neuralgia.

The same observations apply to the ext. gentianæ fluidum, U.S.P. and the extractum calumbæ fluidum, U.S.P., as well as to their other fluid extracts.

## RICHARDSON'S PHOSPHORUS PILLS.

Messrs. J. Richardson and Co., Leicester, have forwarded us a sample pocket-case of phosphorus pills, which is in every respect worthy of their high reputation in pharmacy, and especially in respect to the production of those convenient sugar-coated pills which are now coming largely into use. This pocket-case includes a variety of pills made according to exceedingly well-devised and useful formulæ. These formulæ, selected from a long list which they publish, indicate ingenuity, experience, and skill, which are now brought to bear upon the selection of convenient pharmaceutical preparations for the use of physicians and practitioners. A revolution is being effected in practice by this method, and with such cases as that which Messrs. Richardson supply, and with one of their full lists of formulæ, a practitioner may now carry on the great bulk of his practice very efficiently and very agreeably to himself, and very usefully and pleasantly to his patients, without being called upon to undergo any of the labour of putting up drugs in the surgery, which at one time constituted the most disagreeable, toilsome, and expensive part of the labours of the day.

## FOOD ANALYSIS.—ALE.

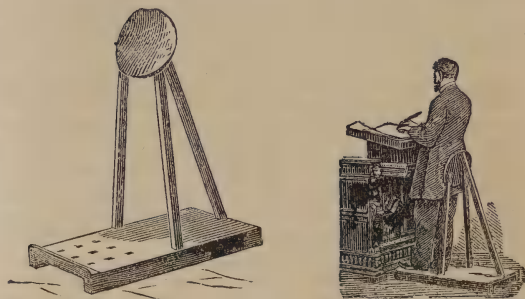
According to a report of Mr. Wanklyn's, the ale brewed at All Saints Brewery, Stamford, by Messrs. Melbourn Brothers, is of unusually fine quality, owing partly to the excellence of the water in the brewery.

The analytical data are as follows:

Alcoholic strength, 6 per cent. by weight.	
Specific gravity ..... 1.009 at 60 Fahr.	
Fixed organic matter 4.32 per cent.	
Ash ..... 0.40 „	

## HEYWOOD'S STAND-REST.

This stand-rest is intended, as will be seen, for the convenience of those who are confined to the desk, the writing-table, or the easel, or who are much engaged in school work or in lecturing. For all these purposes, it is very desirable to be able to have some means of support in the erect position. The stand-



rest will, we believe, be likely to come largely into use by mercantile men and by literary men, and will be found not only convenient but advantageous to the health. Mr. John Heywood, 141, Deansgate, Manchester, has undertaken the manufacture and supply of this stand-rest, which is the invention of a medical man in Warrington. The London agent of Mr. Heywood is Mr. Pitman, 20, Paternoster-row.

## SLOW COMBUSTION STOVES.

Messrs. Barnard, Bishop, and Barnard, of the Norfolk Iron Works, Norwich, have laid householders under a distinct obligation by the introduction of their valuable slow combustion stoves. A good deal has been written, and many experiments have been made, by scientific and unscientific persons with the view of combining perfect and economical combustion of coal; and, consequently, large heating power in ordinary fire grates, with the means of ventilation by open fires. We have seen a good many attempts made, and have had, for the most part, to register as many failures. To meet all the conditions of the problem, we have never seen any so successful as this invention of Messrs. Barnard. It constitutes a veritable reform in fire grates, and air passes in freely and gradually, and the fire is so arranged as to present height and surface forming a thin vertical mass of burning coal, through which the air circulates freely, the frontage of fire in an ordinary combustion stove of Messrs. Barnard being 12 inches by 14 inches. No one who tries these grates will be inclined, so far as our experience can guide us, to employ any other. The designs are very tasteful, the price is moderate; and, in houses troubled with a smoky chimney, they have the advantage that, when used with a blower, they effectually stop that most disagreeable of household inconveniences.

## RECENT FRENCH BOOKS.

*Published by Octave Doin, rue Antoine-Dubois.*

De la Péricardite à forme hydrophobique, par le docteur P. Boucquet. In-8 de 80 pages. Prix : 3 fr.

*Published by P. Asselin.*

De la congestion pulmonaire rapide de l'œdème aigu du poumon, avec ou sans expectoration albumineuse, par le docteur J. P. Mercier, lauréat de la Faculté de Paris. 2 fr.

*Published by G. Masson.*

De l'emploi de la méthode de Brand et du bain tiède dans le traitement de la fièvre typhoïde, par le docteur P. Laure. In-8. Prix : 1 fr. 50.

Recherches expérimentales et cliniques sur la sensibilité, par le docteur Charles Richet. Un volume in-8 de 344 pages, avec figures dans le texte. 5 fr.

Manuel d'ophtalmologie, par le docteur G. Camuset. Un volume in-18 raisin de 800 pages, avec 1,211 figures dans le texte et une eau forte de la bibliothèque diamant. Cartonné. Prix : 7 fr.

Recherches sur l'acuité visuelle mesurée plusieurs années après les opérations de cataracte et sur la cause la plus ordinaire de sa fréquente diminution, par le docteur Jules Albert.

Essai sur le rôle du sang dans le phénomène de la généralisation du cancer de l'estomac, par le docteur A. Audibert.

*Published by A. Coccoz.*

Etudes sur les maladies charbonneuses observées chez les mégissiers de Millau (Aveyron), par le docteur Bompaire. In-8. Prix : 1 fr. 50.

*Published by J. B. Baillière et Fils.*

Essai d'urologie clinique. La fièvre typhoïde, par le docteur Albert Robin. Grand in-8, 264 pages. Prix : 4 fr. 50.

*Published by Delahaye et Cie.*

Pathologie et clinique chirurgicales, contenant la description des maladies chirurgicales, un manuel de médecine opératoire, de bandages et d'embaumement, par M. le docteur Fort. 2 vol in-8, avec 542 figures. Prix : 25 fr.

Étiologie de la carcinose, par le docteur Salle. In-8. Prix : 3 fr.

Du Diabète sucré chez l'enfant, par le Docteur Redon. In-8. Prix : 3 fr.

Essai sur la pathogénie et le traitement des hémorrhagies de la paume de la main, par le docteur Ledouble. In-8. Prix : 2 fr. 50.

Essai sur la syncope, recherches cliniques et expérimentales par le docteur Hoste. In-8. Prix : 2 fr. 50.

Essai sur le rôle du sang dans le phénomène de la généralisation du cancer de l'estomac, par le docteur Crubert. In-8. Prix : 1 fr. 50.

Leçon d'ouverture du cours de pathologie médicale de M. le professeur Jaccoud. In-8. Prix : 50 c.

De l'infection purulente sans plaies exposées, par Domée. Prix : 3 fr.

Traité des maladies chroniques de l'utérus, par le docteur Abeille. 10 fr.

Traité pratique des maladies de l'appareil génital de la femme, par le docteur G. Gerard. 3 fr.

De l'influence des maladies du foie sur la marche des traumatismes, par le docteur Maurice Longuet. 2 fr. 50.

*Published by Lawvereyns.*

Manuel de médecine légale et de jurisprudence médicale, par le docteur A. Lutaud. 1 vol. in-12 de 736 pages avec 38 figures dans le texte. Prix : 8 fr. 50.

## PARIS GRADUATION THESES.

(March 5 to 10, 1877.)

Festal (Phillippe). Etude sur le délire nerveux, traumatique. In-8. de 40 pages.

Favale (Eugène). De la vieillesse dans ses rapports avec le traumatisme In-8 de 54 pages.

Pascalini (Auguste). De la Dilatation permanente et progressive dans le traitement des rétrécissements de l'urèthre. In-8 de 40 pages.

Janicot (J.). Etude sur un nouveau mode de traitement des rétrécissements de l'urèthre par la dilatation (dilatation immédiate progressive du professeur Le Fort.) In-8 de 56 pages.

Miquel-Dalton (A.). Des lésions des organes génito-urinaires dans le diabète sucré. In-8 de 32 pages.

Bricard (Ernest). Des kystes spermatiques. In-8 de 32 pages.

Henouille (Albert). De la Néphrite interstitielle dans ses rapports avec les lésions athéromateuses des artères. In-8 de 72 pages.

Guilleminot. Des polypes utérins à apparition intermittente. In-8 de 50 pages.

Monier (Eugène). Des résultats fournis par la médication salicylée en Angleterre, dans le traitement du rhumatisme articulaire aigu. In-8 de 58 pages.

Denance (Camille). Contribution à l'étude de la septicémie pleurale ; nouvelle indication de la pleurotomie. In-8 de 60 pages.

Brugel (F.-Louis). De l'arthrite sacro-iliaque blennorrhagique. In-8 de 48 pages.

Dupas (Francis). Des plaies pénétrantes simples de l'abdomen par instruments contondants. In-8 de 36 pages.

Mary (Georges). Etude sur une forme d'adénomyxite péri-utérine. In-8 de 68 pages.

Bronh (Eugène). Contribution à l'étude du traitement des plaies des doigts et des orteils. In-8 de 60 pages.

(April 16 to 21, 1877.)

Barker (A. R.). Considérations sur les soins à donner à la femme, en dehors de tout accident, avant, pendant et après l'accouchement. In-8 de 32 pages.

Baillod (Jean-Pierre). Etude sur la rétraction de l'aponévrose palmaire. In-8 de 40 pages.

Barié (Ernest). Etude sur la ménopause. In-8 de 204 pages, chez V. A. Delahaye et Cie.

Piérin (Emile). Contribution à l'étude de l'amblyopie congénitale, sans lésions appréciables à l'ophtalmoscope. In-8 de 52 pages.

Du Souch (Adrien). De l'incontinence d'urine essentielle. In-8 de 48 pages.

Feuillet (Léon). Quelques cas d'hémaniethésie de cause micro-céphalique. In-8 de 36 pages, chez Doin, éditeur.

Isautier (François). Considérations sur les pansements des plaies de la tête, solution de continuité des parties molles externes. In-8 de 92 pages.

Holman (Jean-Baptiste). Considérations sur la menstruation chez les femmes rhumatisantes. In-8 de 48 pages.

## MISCELLANY.

SIR ROBERT CHRISTISON, who has been in failing health for some time, has resigned the Chair of Materia Medica in the University of Edinburgh, which he has held with much distinction since the year 1832. Sir Robert, before being appointed to the Chair which he has now relinquished, had filled for ten years that of Medical Jurisprudence.

DR. KUNDRAT, professor extraordinary of pathological anatomy in Gratz, has been appointed ordinary professor of the same subject.

THE fifth annual meeting of the German Public Health Association will be held in Nuremberg on September 25, 26, and 27.

DR. WILHELM VOLKMANN, of Halle, one of the founders—with Weber, Müller, Von Baer, and others—of modern physiology, died, at the age of 76, on April 21.

SUPERSTITIONS REGARDING HYDROPHOBIA.—It is very remarkable to note what singular superstitions still lurk amongst rural populations. For instance, at Rivesaltes, in the south of France, some terrible cases of hydrophobia have lately occurred. The authorities, be it noted, have adopted what they call preventive measures ; that is to say, they have sent for some *saloudadous*. In Roussillon seventh sons are known by this name, and are believed to have the power of curing the bites inflicted by mad dogs, and of blessing morsels of bread, called *passagnats*, which are supposed to preserve human beings and dogs from hydrophobia. The *saloudadou* perform his cures by means of a crucifix, uttering some sacramental words from an entire sacred liturgy peculiar to himself. A variety of abnormal powers are likewise attributed to these seventh sons, such as the capability of treading under foot, or applying to the tongue a bar of red-hot iron, without receiving any bodily hurt.

QUICKSILVER HOARDING.—The *Pharmaceutical Journal* quotes some curious evidence which tends to show that the well-known passion of the Asiatic for converting his surplus wealth into gems and the precious metals, and hoarding it up with a characteristic contempt for interest, has manifested a considerable development in investments in quicksilver. It is stated, apparently upon good authority, that the stock of this metal in the warehouses of Hong Kong on the 1st of February was 11,000 flasks, and that subsequent shipments from San Francisco to that port have raised that amount to 19,500 flasks. As the most careful estimates give the total consumption of quicksilver in all China at 100 flasks per month, it is clear that the stock in hand in February, without the subsequent shipments, would have been sufficient to provide for the Chinese consumption during several years. What then is to become of all this quicksilver, for it is to be presumed that the San Francisco merchants have some idea of what they are about in sending so much across the Pacific? Is this metal destined to play a rôle similar to that of its sister silver, which for so long was poured into the Asiatic continent without an apparent return? This theory finds some support from an assertion, which however requires further confirmation, that 16,000 flasks of quicksilver were recently uncovered in "one of the towns in India."



**THE UTTERANCE OF WORDS.**—An Italian physiologist, M. Marreotti, has communicated to the Academy at Rome some curious details in reference to utterance of words. Gibbon has calculated that an English orator, possessing an ordinary amount of eloquence, could pronounce 7,200 words in an hour; that is to say, one hundred and twenty to the minute. Taking advantage of the shorthand records of the Italian Parliament, M. Marreotti has made a similar calculation for the orators of Italy, and finds that Signor de Foresta pronounced sixty words in a minute; Massi Jno. d'Azeglio, ninety; Rattazzi, a hundred and fifty; and Cordova, the quickest of all, got through as many as two hundred and eighteen to the minute. Perhaps, however, the world has not yet seen the greatest attainable amount of volubility in parliamentary oratory; that may be reserved for the time when the female sex take their seats as parliamentary representatives, and take their share in debate with the tyrant man.

**PRESERVATION OF INFUSIONS, DECOCTIONS, ETC.**—The following simple plan of preserving infusions, syrups, the fresh juice of fruits and other fermentable fluids, has (*Detroit Review of Medicine*) stood the test of experience in the hands of Professor Almen (Proc. Am. Pharm. Association, 1875). The liquid to be preserved is introduced into a bottle, which it nearly fills. A cork is then introduced, through which passes a glass tube, six cm. long and two to three mm. internal diameter, which is narrowed somewhat at the lower end, and loosely filled with cotton wool. The bottles thus corked are placed in a water-bath, and heated to the boiling point of the bath for some time. In this manner the air originally contained in the bottles is completely expelled, and that which enters to fill its place as the bottles become cooled is filtered from ferment germs in passing through the cotton. The cork may be fitted also with a syphon tube, reaching to the bottom of the bottle, and kept closed with a caoutchouc tube and clamp after the air has been expelled, and thus portions of the contents may be removed from time to time without detriment to the remainder. Infusions of rhubarb and of senna were preserved in this method in perfect condition for eighteen months.

**HOW THIRTY-FIVE CONSECUTIVE AMPUTATIONS WERE SUCCESSFULLY TREATED ONE HUNDRED YEARS AGO.**—In a paper lately read before the New York Academy of Medicine, Dr. Stephen Smith read a paper on the treatment of amputations practised by Alanson one hundred years ago, and pointed out that the success which attended his method of treatment has not been excelled, and seldom equalled, since. At the time it was received with astonishment, and even now it becomes a matter of admiration, for it appeared that the cases were not selected, but were consecutive in hospital and private practice. Previously to the time of Alanson, the ordinary method of amputation was upon tissues which had undergone mortification, and which of necessity were treated openly. It was true, however, that in 1679, or one hundred years before Alanson's time, a surgeon, Yonge, of Plymouth, performed the first flap-operation. The operation was not an original idea of his, but was borrowed from Lowdham of Exeter. In Alanson's time, the operation most in vogue was to make a cutaneous incision, retract the flap, and make a section of the muscles above. The operation was then finished by sawing off the bone above the cut muscles. Alanson's modification was to make one single oblique sweep of the knife, retract and saw off the bone, draw out each artery, tie, and sponge the surface with warm water. Dr. Smith said that Alanson's method was essentially that which was known and practised under the name of the circular flap, yet no such results have been obtained as were recorded by Alanson; and it might have been that some of his success was due to the fact that all of the soft parts were separated by a single incision, in such a manner as to leave a conical cavity when the operation was complete. The after-treatment consisted in supporting the stump with a bandage, and placing it on a pillow.

**A WELL-EARNED TESTIMONIAL.**—Mr. Darwin has received as a testimonial, on the occasion of his sixty-ninth birthday, an album, a magnificent folio, bound in velvet and silver, containing the photographs of one hundred and fifty-four men of science in Germany. The list contains some of the best known and most highly-honoured names in Europe. He has likewise received on the same occasion from Holland an album with the photographs of two hundred and seventeen distinguished professors and lovers of science in that country. A German correspondent informs us that the German album bears on the handsome title-page the inscription, "Dem Reformator der Naturgeschichte, Charles Darwin".

**THE INTERNATIONAL MEDICAL CONGRESS** will be held in Geneva from September 9 to 15. The following subjects are to be discussed in the several sections. Section I.—*Medicine*. 1. Ulcers of the stomach: reporter, Professor Lebert. 2. Parasite diseases of the skin: reporter, Dr. Hardy (Paris). 3. Etiology of typhus (? Typhoid): reporter, Dr. Bouchard (Paris). 4. Treatment of fever by baths: reporter, Dr. de Cérenville (Lausanne). 5. The destiny of tissues implanted in the organism: reporter, Professor Zahn (Geneva). 6. The indications and therapeutic value of tracheotomy in croup: reporter, Professor Revillod. 7. On an universal pharmacopœia: reporter, Professor Gille (Brussels). Section II.—*Surgery*. 1. Esmarch's hæmostatic method: reporter, Professor Esmarch (Kiel). 2. Influence of injuries on pregnancy, and *vice versa*: reporter, Professor Verneuil (Paris). 3. The treatment of ozena: reporter, Dr. Rouge (Lausanne). 4. The ultimate results of resection of joints: reporter, Dr. Ollier (Lyons). 5. The galvanic cautery: reporter, Professor Julliard (Geneva). 6. Ambulances for the wounded. 7. Fistulæ of the penis: reporter, Professor Reverdin (Geneva). Section III.—*Obstetrics and Gynecology*. 1. The placental souffle: reporter, Dr. Rapin (Lausanne). 2. Artificial feeding of children during the first year: reporter, Professor Zweifel (Erlangen). 3. Anæsthesia during labour: reporter, Dr. Piachaud (Geneva). 4. The law of growth of the child during the first year, and its physiological and its pathological variations: reporter, Dr. Odier (Geneva). 5. Pseudo-membranous dysmenorrhœa: reporter, Dr. Gautier (Geneva). Section IV.—*Public Medicine*. 1. Influence of alcoholism on mental diseases: reporter, Dr. Magnan (Paris). 2. Influence of alcoholic drinks on the health of their manufacturers and consumers: reporter, Dr. Guillaume (Neuchâtel, Switzerland). 3. Questions in medical geography: reporter, Dr. H. C. Lombard (Geneva). 4. Influence of immigration from the country into towns: reporter, Dr. Durrant (Geneva). Section V.—*Biology*. 1. Characters of the electric charge of the torpedo, its physiological analogies with muscular contraction: reporter, Dr. Marey (Paris). 2. Cerebral localisation: reporter, Dr. Broadbent (London). 3. The cause of sleep: reporter, Dr. Preyer (Jena). 4. Human entozoa: reporter, Dr. C. Vogt (Geneva). 5. Functions of the spleen: reporter, Dr. Schiff (Geneva). 6. Histology of the ovum, and the function of the zoospers in fecundation: reporter, Dr. Fol (Geneva). 7. Physiological antagonism: reporter, Dr. Prevost (Geneva). Section VI.—*Ophthalmology*. 1. Enucleation of the eyeball and sympathetic ophthalmia: reporter, Dr. Warlomont (Brussels). 2. Etiology and prophylaxis of myopia: reporter Dr. Haltenhoff (Geneva). 3. What are the best methods of determining the limits of the most important functions of the eye; *a*. Acuteness of vision; *b*. Perception of colours; *c*. Refraction and accommodation; *d*. Mobility of the eye: reporter, Dr. Fol (Geneva). 4. Tenotomy of the tensor tympani: reporter, Dr. Colladon (Geneva).—An exhibition of new medical, surgical, and physiological apparatus and instruments will be held during the Congress. Articles must be sent, free of duty and carriage, to Dr. J. L. Reverdin, Place du Lac de Genève, before September 1. Intending exhibitors should send notice of the space required by them not later than August 15. Communications relating to the congress must be addressed to the general secretary, Dr. Prevost, 8, Rue Eynard, Geneva.

# The London Medical Record.

## CHARCOT AND PITRES ON CEREBRAL LOCALISATION.

(Continued from page 133).

IN the May number of the *Revue Mensuelle de Médecine et Chirurgie*, MM. Charcot and Pitres take up the subject of epileptiform convulsions in connection with lesions of the cortex.

These convulsions consist occasionally in a limited number of localised muscular spasms; at other times they have all the character of idiopathic epilepsy. They generally commence in an isolated group of muscles, and propagate themselves to other muscles of the same limb or to the whole body, before the patient loses consciousness. The loss of consciousness is not a constant phenomenon in epilepsy of cortical origin, and the individual can often give a complete account of the course of the attack. These epileptiform convulsions were observed by the older physicians, but only lately have their true nature and pathology been elucidated. Odier (*Manuel de Médecine Clinique*, 1811) published one remarkable case belonging to this group, and several are to be found in the classical works of Lallemand and Abercrombie. Serres (*Anatomie Comparée du Cerveau*, 1824-26) makes a very remarkable statement in reference to the causation of such phenomena, after relating the case of a young man who, after suffering from discharge from the right ear for eighteen months, began to be affected with convulsions limited to the left arm. On *post mortem* examination, the portion of the brain lying on the petrous portion of the temporal bone was found to be in a state of putrid abscess. From this, and a similar case quoted from Sandiford, he concludes "that one may, from careful comparison of instances, indicate the seat of lesion in the brain, according to the limb which is affected by paralysis or convulsions. Thus, if the right arm be affected, the lesion will be in that portion of the brain which corresponds to the upper left parietal bone, and *vice versa*".

In 1827, Bravais (*Op. cit. ante*) described, under the name of *Epilepsie hémiplegique*, a variety of epilepsy commencing in one limb, or on one side of the face, or on one side of the body, giving exact descriptions of the phenomena; but he "completely neglected the anatomico-pathological aspect of these cases, and it is to Hughlings Jackson that we owe the first exact investigations on the relation of partial epilepsy to cortical lesions". More recently, the experimental researches of Hitzig, etc., fully confirmed the views expressed by Hughlings Jackson. Experiments on animals have shown that electrical irritation of the cerebral hemispheres frequently causes localised, unilateral, or general convulsions, having all the characters of those described by Hughlings Jackson in men; and Bartholow has shown that in man also the same method of irritation is followed by similar results. Convulsive attacks may result not only from immediate irritation, as in these experiments, but also from lesions of the cortex of long standing. Several experimental instances of this kind are quoted from Hitzig's observations. *Ueber Production von*

*Epilepsie durch experimentelle Verletzung der Hirnrinde* (Untersuch. über das Gehirn, 1874, p. 271). Epilepsy of cortical origin may, therefore, result from two different conditions; (1) under the influence of direct and immediate irritation; (2) under the influence of a permanent lesion. The same is found true in man. The epileptic attack may commence with the arm, the leg, or the face. It is possible that it may commence sometimes in the muscles of the trunk, the neck, or the viscera, but up to the present no such mode of onset has been described with precision.

*Cortical Epilepsy commencing with the Arm.*—Most commonly the spasms commence in the hand and particularly in the thumb and index-finger. According to Hughlings Jackson, the spasms commence in the parts most volitional, hence in the thumb and index-finger, which are special instruments of volition. The authors think that this explanation may be questioned, and that it is not impossible that the fact may be due to the more frequent occurrence of lesions in the centres for the arm. But whatever the explanation may be, the clinical fact is established that it is in the thumb and index-finger that the spasms for the most part commence. The fingers flex or extend suddenly, then the spasms extend upwards. The convulsive action may remain limited to the arm, or may spread to the face and leg, or may become general. Consciousness is not usually lost till the convulsion has invaded a considerable muscular area. The convulsions last from one to five minutes generally, and are followed by a weak or paretic condition of the convulsed limb. The attack is often preceded by an aura referred to the parts about to be invaded. The frequency of the attacks is variable. Occasionally they occur every day or several times a day; occasionally months may elapse between successive attacks. Sometimes they go on more or less incessantly for several hours, and produce an *état de mal* of a grave character.

Of cortical epilepsy commencing in the upper extremity, the first five illustrative cases are quoted from Hughlings Jackson.

In the first—a case of convulsions limited to the right arm—a tumour was found in the posterior part of the first frontal convolution in the left hemisphere.

The second is a case of epilepsy commencing in the left thumb. A small tumour was found at the lower extremity of the ascending frontal on the right hemisphere. But there were also some other partial indurations of the hemisphere, the situations of which are not determined.

In a third, in which convulsions always began in the left thumb, a small tubercle of the size of a nut was found at the posterior part of the third frontal convolution of the right hemisphere.

In a fourth, in which the attack began in the right shoulder and descended the arm, a rounded tumour about an inch in diameter was found at the posterior extremity of the first frontal convolution in the left hemisphere. In the intervals of the attacks, the arm was paralysed.

In a fifth, in which the attacks were frequently limited to the right arm, the spasms began at the little finger of the right hand, and gradually spread to the right side, with loss of consciousness. Right hemiplegia gradually developed itself. On *post mortem* examination, several tumours were found in the left hemisphere, of which the largest, measuring two inches and a half by one inch and a half, was situated in the upper part of the parietal lobe, close



to the intrahemispherical sulcus, and pressing on the upper part of the ascending parietal convolution.

In a case occurring in the Salpêtrière, under the care of Charcot, and reported by Lépine (*De la Local. dans les Mal. Céréb.*, 1875), left hemiplegia occurred on the 27th November, 1869; and on the 30th, a convulsive attack without loss of consciousness began in the left arm. On *post mortem* examination, an apoplectic extravasation was found occupying the posterior part of the first frontal at its junction with the ascending frontal convolution of the right hemisphere.

The next case is one of left hemiplegia with aphasia, under the care of Charcot. The aphasia rapidly disappeared, but the paralysis continued. After three months the patient began to suffer from epileptic attacks, which always began in the left arm. After death, a patch of yellow softening was found at the base of the first and second frontal convolutions, and extending in the centrum ovale almost to the ventricle. The ganglia were intact.

A man, aged 48, after an apoplectic attack with violent convulsions, recovered with monoplegia of the right arm. Three weeks afterwards, he began to suffer from unilateral convulsions of the right side, frequently limited to the right arm and forearm. After death, a glioma of the size of a pigeon's egg was found in the middle third of the ascending frontal convolution on the left side.

M. F., aged 28, was suddenly seized with a convulsive attack, beginning in the fingers of the left hand. A second attack occurred two days later, leaving paresis of both limbs on the left side, without affection of sensation. Death occurred in about three months. On examination, a tubercular mass was found in the middle third of the ascending frontal convolution of the right hemisphere. A small recent tubercular mass was also found in the right side of the pons Varolii.

An interesting case is next related of monoplegia of the left arm associated with epilepsy, beginning in the left arm, which ultimately recovered. An old woman, aged 81, was suddenly, and without any premonitory symptoms, seized with paralysis of the left arm. She complained of pain in the head, limited to the right parietal region. There was no other paralysis, either of motion or of sensation. Three days later, she was seized with sudden tonic spasm of the left arm, which was raised to a right angle with the trunk, the fist being closed, and the head and eyes directed to the left. After a few seconds, the tonic rigidity gave place to clonic spasms on the left side, with loss of consciousness. This position lasted four hours, after which the left arm remained paralysed, and also some degree of paralysis was observed in the lower part of the left side of the face, with rotation of the head and eyes to the right. Next day the rotation of the head and conjugate deviation of the eyes had disappeared, and the facial paralysis was almost imperceptible. On the following day it had almost disappeared, and some power had returned in the left arm, which, however, tingled considerably. In the course of a month, complete recovery had taken place.

*Epilepsy commencing with the Leg.*—This is more rare than epilepsy commencing with the arm, but its progress is in all respects analogous. The aura starts often in the foot or calf, and has the character of an acute pain, a cool breeze, or a dragging sensation, which mounts up to the arm or face. As in the other forms, the convulsions may remain limited

to the leg or become general with loss of consciousness.

An example of this form, communicated by M. Broca to the Société de Chirurgie (Dec. 19, 1866), is quoted from an account given by M. Ach. Foville (Art. "Convulsions." *Nouv. Dict. de Méd. et Chir. pratiques*). This was a case of epilepsy consequent on injury to the skull in the left fronto-parietal region. The epileptic attacks began in the right leg. Recovery followed trephining on the seat of injury.

Another case is reported from Griesinger, in which the seat of the lesion was carefully noted. It is that of a man who became the subject of frequent clonic spasms in the right leg. These occasionally extended to the whole of the right side of the body, with loss of consciousness. In the interval of the attacks, the right limbs were completely paralysed, the face not being affected. After death, a hydatid cyst, 1.5 inch by 1.8 inch, was found on the surface of the left hemisphere, the anterior extremity being on a line drawn perpendicularly upward from the external auditory meatus. There were also, however, five other similar cysts of the size of a haricot, situated on the posterior part of the parietal lobe and on the frontal lobe.

*Epilepsy commencing with the Face.*—The attack may begin in the eye, eyelids, cheek, or lips, and with an aura. Most frequently it commences in the lips, and the angle of the mouth is drawn to the side of convulsion; then convulsive movements occur in the lips, eyelids, and extend to the neck and to the side of the body, or become general. During the attacks the face and eyes are drawn strongly to the side opposite the convulsions. Often at the commencement the head and eyes are directed to the side in which convulsion is about to occur, and then during the attack they turn to the opposite side. The tongue is also affected, and is frequently bitten.

The first case alluded to is quoted from Hitzig (*Archiv für Psychiatrie*, 1872). This relates to a French soldier who was wounded in the right side of the head by a bullet on December 10, 1870. At the beginning of February he began to suffer from clonic spasms of the left side of the face and tongue, followed by some degree of paralysis. The convulsions were occasionally repeated, and extended more or less unilaterally. There was no loss of consciousness. After death, corresponding with the wound in the skull an abscess about 0.8 inch in diameter was found in advance of the fissure of Rolando, between this and the pre-central fissure, at the lower part of the ascending frontal convolution. Some hæmorrhagic points existed on the brain, more numerous in the right than left hemisphere, at the junction of the grey and white matter. The consistency of the brain was normal, except in the immediate neighbourhood of the abscess. A very interesting case is reported by Wernher (*Archiv für Path. Anat. und Physiol.*, Band lvi). The patient, after a depressed fracture of the left temporal region, showed on the following day paresis of the muscles of the right side of the jaw, and of the right eyelids. In the night aphasia came on. On the second day after the injury, there were distinct facial paralysis on the right side, and a certain degree of rigidity of the muscles of the neck, and spasms of the right facial muscles. During the attack the neck, tongue, and right arm were affected. Death occurred four days after the injury, and it was found that the membranes had been lacerated, and much bruising had occurred on the convolutions bounding the fissure of Sylvius. On the frontal convolutions there was an extravasa-

tion of blood mingled with pus, which extended up to the parietal and temporal convolutions. The surface of the frontal lobe was slightly softened.

A case presenting several interesting features was admitted into the Salpêtrière, sent to Charcot as being "a curious case of hemiopia without apparent affection of the optic nerves, and without any alteration of central vision." M. Landolt's report on the case was, "Left hemiopia well marked. Pallor of the papillæ. No optic neuritis or atrophy properly so-called. Slight venous hyperæmia of the retina." The patient complained of pain in the head, referred to the middle frontal region. She began to suffer from frequent epileptic attacks with loss of consciousness, affecting more particularly the left side of the face, with rotation of the head and eyes to that side. Occasionally the spasms extended to the left arm, and very rarely to the leg. On careful examination, it was found that the first phenomenon of the attack was a slight lateral oscillation of the right eye; then this eye turned forcibly to the left. During this time the left eye continued directed forwards, and retained this position during the first half of the attack. In the second half, both eyes became directed towards the right. Left hemiplegia gradually came on, at first with internal strabismus of the left eye, and pupil smaller than on the right. On the last day, along with left hemiplegia and stupor, there was conjugate deviation of the eyes to the right.

The lesions found in this case were multiple, and therefore little reliance can be placed on it in a localisation point of view. They were recent softening of the whole of the left lobe of the cerebellum, and an irregular lacuna of the size of a small nut in the left middle peduncle of the cerebellum. On the surface of the right hemisphere four foci of softening of long standing were found, two on the first frontal, one on the second sphenoidal, and the fourth on the ascending frontal convolution, between the basis of the second and third frontal gyri. Also a small lacuna of the size of a lancet existed in the lenticular nucleus on each side.

Another case is quoted from Gliky (*Deut. Archiv für Klin. Med.* 1875), in which there were at first convulsions and gradually progressing left hemiplegia beginning with the left arm. On *post mortem* examination, a lesion of a gliomatous nature was found in the grey matter of the ascending frontal and parietal convolutions, in the basis of the three frontal convolutions, and in the superior and inferior parietal lobules, paracentral lobule, and posterior internal surface of the first frontal convolution in the right hemisphere.

The epileptic attack can in a certain number of cases be excited by external stimulation. A case of this kind exists in the Salpêtrière. She has been the subject of spasmodic infantile hemiplegia on the left side, and is occasionally attacked by spontaneous hemiplegic epilepsy. An attack can be induced by forcibly raising the point of the left foot.

When the attack is preceded by an aura, one may often avoid it by pinching the skin at the point of origin, or by compressing the limb above it. An interesting case of this kind is related by Odier (*Manuel de Méd. Pratique*, 1821).

D. FERRIER, M.D.

## HANNOVER'S RESEARCHES ON THE RETINA.\*

HANNOVER considers separately in minute detail the histology of the retina of the pike, the frog, the hen, and of man. The work is copiously illustrated by drawings made by means of the camera from preparations either of the fresh retina or after hardening by chromic acid. The results of his newer researches, begun five years ago, were communicated to the Academy of Copenhagen, then published in a separate form in Danish, and finally in French. It is impossible to do justice to this important volume in a short extract. The author has assigned to himself the task "of overthrowing the theory of MM. Müller and Schultze regarding the rods and cones considered as nerve-structures and as the terminations properly so-called of the optic nerve", and in doing so has produced a classic treatise which is indispensable to histologists who occupy themselves with the retina.

Briefly stated, the chief points of the work are as follows.

1. *Stratum fibrarum cerebralium* (optic-nerve-layer). "The cerebral fibres of the trunk of the optic nerve spread outwards on all sides after their entry into the cavity of the eye. The layer has its maximum of thickness around the point of entrance of the optic nerve; is completely wanting in man in the fovea caeca and its immediate vicinity; becomes gradually thinner anteriorly; but the termination of the fibres in general and in proportion as they become fewer and disappear is unknown. The isolated fibres have a tendency to form varicosities, although not to the same degree as the cerebral fibres of the brain. Although of variable thickness, they are in general fine, but can no more than those of the brain be considered as destitute of medulla, or as simple axis-cylinders."

2. *Stratum cellularum cerebralium* (layer of ganglion-cells). These cells are of one type in all the vertebrata, and resemble the cells of medium size in the brain. They have a cell-membrane, and a relatively large nucleus. They are external to the optic nerve-expansion, except in the hollow formed by the optic nerve at its entrance, in which position the author has found a group of cells on its internal surface.

Some of the cells have long fine processes, which are direct continuations of the cellular membrane, and have a similar structure and appearance. There may be one or several processes, and they may ramify. Hannover has rarely in man seen a process unite two cells.

The "cerebral fibres" of the retina are much more numerous than the cerebral cells, and the disproportion is so great that there would not be cells enough to suffice for all the fibres, even if each of them were furnished with one or two processes. But there is not reason to suppose that all the cells have processes, nor are the processes similar to the cerebral fibres. The continuation of the fibres of the optic nerve layer or cerebral fibres with the ganglion (cerebral) cells is not proven, the author's own observations having yielded negative results, and the positive observations made by others not being able to withstand criticism. Thus "the first and most important link of the chain between the optic nerve

\* *La Rétine de l'Homme et des Vertébrés, Mémoire Histologique, Historique-critique, et Physiologique.* Avec six planches gravées. Par Adolphe Hannover. Paris: Baillière et Fils. 1876.



and the rods and cones, namely the connection between cerebral fibres and cerebral cells is broken."

3. *Stratum granulosum* (molecular layer). This layer is composed of a finely granular mass, in which *débris* resembling broken down cells is sometimes seen. In hardened eyes, striæ concentric to the eye are sometimes observed. Processes from the cerebral cells can be traced into it and are then lost. They cannot be traced through it to the next layer. It acts as a neuroglia to the cells. "The second link in the chain is thus broken."

4. The *stratum granularum internum* (internal granular layer) is chiefly composed of round or oval cells, some of which, but not many, have processes. These, the author believes, are "true cerebral cells", but are not to be confounded with the other cells thus designated in the ganglion cell-layer. The cells are probably separated by a fluid substance, and although found adherent to the radial fibres have no connection with them. Both in osseous and cartilaginous fishes the cells of this layer lie in a reticular membrane. In the pike this membrane is divided into three layers. The radial fibres pass between their meshes.

5. *Membrana intermedia* (intergranular layer). This layer is composed of an independent solid membrane, of considerable thickness, which separates completely the preceding four layers, all of which the author believes to consist of nerve structures from the outer layers which are not nervous. There are large round nuclei on its surface at regular intervals. The radial fibres end on its inner surface. Nothing passes through it.

6. The *fibræ radiales* (radial fibres) are a continuation of the sheath of cellular tissue which surrounds the optic nerve before its entry into the eye, and is continued on it after its entry. The radial fibres should thus be considered as the *neurilemma fibrarum cerebri retinæ*, but this neurilemma is unusually extensive, being found in the other parts of the retina which are internal to the *membrana intermedia*. The arcades which extend outwards from the internal limiting membrane enclose fasciculi of the optic nerve fibres. The nuclei of the radial fibres belong to the connective tissue which enters into their formation, and are mostly found in the internal granular layer. The fibres spread out on the inner surface of the intergranular layer (*membra. intermed.*) and end there. They do not pass through it.

7. The *membrana limitans interna* is an independent structureless membrane, invested on its inner surface (as the author first showed in 1846) by an epithelial layer. The cells of this layer are generally large, transparent, and hexagonal, with a round nucleus. There is no distinct independent hyaloid membrane.

8. In the *stratum granulosum externum* (external granular layer) the author recognises a structure which he designates the *calotte* (night-cap). It is immediately within the external limiting membrane. In fishes, birds, and mammalia it is in connection with the cones, in the frog with the rods, but always separated from them by the external limiting membrane. A nucleus is sometimes found in the *calotte*, and it is therefore a true cell. There are further "globules" in one or more layers, varying in different animals. In the frog these are actual cells. These "globules" are generally placed on the filaments of the rods or intercalated between them. The other constituent parts of the layer are the filaments of the rods and cones. The filaments of the

cones are continued from the *calottes*, those of the rods from the external limiting membrane. The filaments are smooth and without varicosities. Between the "granules," or globules, and the filaments there is a distinct space, filled probably by a semifluid substance. The filaments terminate on the external surface of the *membrana intermedia* to which they are attached.

9. The *membrana limitans externa* is an independent membrane, with single or double contour. The author did not succeed in isolating it. It is probable that there exist in it fine openings through which the filaments of the rods pass, but they are not distinct. The filaments pass through without leaving a trace. The cones do not pass through it, the *calotte* resting on its inner surface.

10. *Stratum bacillarum et conorum*. The outer segment of the rods has no special membrane; the inner segment, on the contrary, is a tube formed by an extremely fine and transparent membrane, with finely granular contents. The *linsenförmige Körper* of German authors is produced by the contents collecting at one end. It is not seen in the fresh rods (frog). The outer segment, perfectly smooth and bright before *post mortem* changes, is actually composed of discs superposed one above the other. There is a round nucleus on the inner surface of the inner segment in the frog, in contact with the external limiting membrane. The cones are composed of three parts—the point (outer segment), the body, and its prolongation. The body is a vesicle, especially distinct in man and birds, and is composed of a membrane with finely granular contents. The membrane is not continued to the point. The prolongation is the internal part, and reaches to the external limiting membrane. The author admits that an elliptical body probably exists in the outer part of the body of the cone of the hen. He adheres to his description of the coloured globules of the cones contained in his work (*Recherches mic. sur le Système Nerveux*) published in 1844. He sums up a long critique of the views of different histologists, and notably those of Max Schultze, regarding this layer, by remarking that "the rods and cones, with their granules, *calottes*, and filaments, are not nervous, nor are they in communication with the elements situated internal to the *membrana intermedia*," and that the theory of Müller and Schultze thus falls to the ground, the chain they forged "being broken in every one of its links."

11. *Stratum pigmenti*. "The fundamental form of the pigment-cell is an hexagonal column having a very variable height in different animals; and there is no fixed relation between the breadth of the cell and the thickness of the rods and cones or their relative number. The external part of the cell is clearer than the internal, is beyond doubt always provided with a nucleus, and is solid; the internal part is membranous, and is usually seen in folds. It is filled with pigment on its inner surfaces. The length of the membrane, at its maximum in fishes, decreases in the frog and the hen; in man, it is only represented by fine short tubes. These membranes are probably subdivided into separate compartments, and form the sheaths of the rods and cones discovered by the author. They do not extend beyond the inner end of the outer segment. There are coloured globules amongst the pigment in certain animals, but their existence has not been established with certainty in all.

For valuable observations on the anatomy of the *introtus nervi optici* and the *macula lutea et fovea*

*cæca* of the human eye, reference must be made to the original work.

In order to make the author's views regarding the radial fibres clear, the following remarks are necessary. There are two kinds of radial fibre already described; one by H. Müller and Kölliker, consisting of a delicate true fibre (as distinguished from fibrillary tissue) and containing at one point in its substance a small nucleus; the other by Schwalbe, who figures the radial fibre as a funnel-shaped membranous structure, with a trumpet expansion at the inner end, nuclei being found lying on its surface. The radial fibre described by the author differs from both of these, being, as is more especially evident from his figures, composed of fine bands of fibrillary tissue, neither the membrane of Schwalbe nor the fine fibre of Müller being shown. It is these bands of fibrillary tissue that the author found spread out and apparently ending on the inner surface of the *membrana intermedia*. It is manifest that these forms do not mutually exclude each other. A band of connective tissue, according to the newer views, presupposes fibrillary tissue as its groundwork, a membranous investment, and fine true fibres on its surface; and which of these elements is preserved in the compound structure known as a radial fibre, depends on the reagents which have been used. Nor does it follow that the fibre (properly so-called) and the fibrillary tissue end together.

The author's plates afford abundant proof that chromic acid when properly handled can preserve in the retina delicate forms of fibrillary tissue, which disappear under the influence of the other reagents usually employed.

G. THIN, M.D.

### SEGUIN ON THE USE AND ABUSE OF BROMIDES.

In a paper lately read before the New York Medical Journal Association (*New York Medical Record*, May 5) Dr. E. C. Seguin discussed the use of bromides under two heads: 1. Bromism, or intoxication by the bromides; 2. A statement of his own method of using the bromine salts in the treatment of epilepsy and other neuroses.

Since 1867, experimental physiologists had been making researches regarding the effect of bromides upon the healthy organism, and the most important conclusions reached were two in number. By some, the bromides were believed to act by causing contractions of the arterioles and consequent diminution in the amount of blood in the nervous centres; while others alleged that they affected the nervous tissues directly. There was a general agreement, however, that the physiological result of the action of the bromides was lessened irritability of the nervous centres, especially in the motor tract.

Dr. Seguin believed that the bromides acted mainly by affecting the anatomical elements (ganglion-cells chiefly) of the central nervous system. His belief was based upon physiological experiments in animals, clinical observations in man, and largely on the phenomena of bromism, which could hardly be explained by the vascular theory of the action of the bromides.

It was believed to be chiefly in consequence of the empirical notion that the bromides were indicated whenever there was excitement, aided probably by the extreme application of certain theoretical views regarding the physiological importance of changes in

the amount of blood in the brain and spinal cord, that there had been, and still continued, an abuse or over-use of the various bromides. Cases were not unfrequent in which a condition of impaired nutrition and nervous atony had been brought about and continued for months or years by the use of these medicines.

In a number of cases, Dr. Seguin had observed the following symptoms superadded to the legitimate symptoms of the disease: general debility, with weak pulse and coldness of the extremities; tendency to stupor; slight difficulty in speaking; the bromic breath; and acne. Those patients were weak anæmic individuals, who had been taking the bromides for the relief of certain head-symptoms, gratuitously supposed to be due to cerebral congestion. In some cases moderate doses of the drug had been taken for long periods of time, with frequent temporary relief to certain symptoms. All the time, however, the general condition of the patient had been kept below par, in spite of tonics and selected food. The same mild bromism had been noticed in some cases of hysteria and hystero-epilepsy, without any actual improvement. Injurious effects had been seen from the prolonged use of the bromides in the treatment of melancholia, a disease in which cerebral nutrition was quite surely lowered and perverted. Reference was made to a large class of patients who, without definite disease, suffered from nervousness, inability to sleep, queer sensations about the head, and who were inclined to constantly over-estimate their symptoms. To such patients the physician or druggist was very apt to say, "Take a dose of the bromides." It might be said that the administration of the bromides in such manner did not produce positive ill effects; but to that assertion Dr. Seguin replied by saying, first, that from what was known of the physiological effects of the bromides, such dosing must produce a general lowering of vitality which few patients could tolerate; and, second, that, on general principles, physicians were in duty bound to give no superfluous or non-indicated drug to their patients.

Allusion was then made to the more severe forms of bromism, in which the condition might obtain the dignity of a definite morbid state, have a clear symptomatology, a well-known course, and, as Dr. Seguin was disposed to believe, a central lesion. The symptoms of the more severe forms of bromism might be so aggravated as to simulate dementia, mania, or general paralysis of the insane, and even death might ensue from debility.

Dr. Seguin drew special attention to the resemblance between bromism and general paralysis of the insane. In both there was tremor of the facial and lingual muscles, producing a peculiar vibratory speech. In both there was an uncertainty in the performance of certain movements, as walking or using the hands for fine work: in both there was failure of intellectual force and of memory. Even somewhat exalted notions, though rarely, might be present in bromism. In general paralysis there were other important symptoms, such as contraction and irregularity of the pupil, sexual excitement, peculiar epileptiform seizures, remarkable remissions in the symptoms, and often good physical health, with tense arteries; all those symptoms being absent in bromic intoxication.

Severe bromism fortunately was rarely seen except in the early stage of the treatment of obstinate epilepsy. Bromism had been proposed as a cure for the opium habit; and a paper written by Dr. Schweig,



of New York, upon that subject, furnished a valuable study of the severe effects of the bromides.

Under the head of bromism as a complication in diagnosis, reference was made to a case reported by Voisin. The patient had been under treatment for epilepsy, and, as his physician thought, becoming insane, was sent to Paris. He had been taking during some months bromide of potassium in doses of 90 to 120 grains. The patient was in a state of violent mania, and was removed to the asylum, where his case was looked upon by the officers of the institution as one of general paralysis of the insane. After the cessation of the bromides and the adoption of proper treatment, the man, at the end of thirteen days, was sent to his home in the country quite well.

Dr. Seguin then gave the history of a case which came under his own observation, and in which the addition of bromism to the other symptoms had led to the diagnosis of cerebral lesion of the gravest kind, when really only the basal dura mater was involved. The bromides were withheld and the iodide of potassium substituted, to give the patient the benefit of a doubt regarding the presence of a specific element. The symptoms of cerebral lesion passed away in a few days, and the local symptoms gradually disappeared, except the atrophy of the optic nerve.

Regarding the method of using the bromine salts in the treatment of epilepsy and other neuroses, the following remarks were made.

1. The prolonged use of bromides was contraindicated by congenital feebleness.
2. The bromides were well borne by persons of fairly full habit and good nervous power.
3. The bromides were indicated in cases of abnormally great irritability of the nervous system in its motor (muscular and vaso-motor) and ideational tracts.
4. The contraindications above named were to be much less regarded in the management of that formidable neurosis, epilepsy.
5. Epilepsy was regarded as the only disease which justified the deliberate production of a degree of bromism for its cure.

Dr. Seguin's method of prescribing the bromides in the treatment of a case of "idiopathic" epilepsy was the following :

Two solutions were employed.

R.	Potassii bromidi.....	℥ i.
	Ammonii bromidi .....	℥ ss.
	Aquæ fontanæ .....	℥ vij.
	M.	
S.	To be given by the teaspoonful.	
And		
R.	Sodii bromidi.....	℥ i.
	Ammonii bromidi .....	℥ ss.
	Aquæ font. ....	℥ vij.
	M.	
S.	To be given by the teaspoonful.	

The quantity administered was, as a rule, so divided as to give by far the largest dose in the evening. The bromide was cautiously increased, still keeping the nocturnal dose the largest until slight bromism was produced. It was usually necessary to maintain slight bromism for months, but just as little was to be given as would prevent the attacks. The precise quantity required must be studied in each case. Children tolerated the bromides, as well as the iodides, in relatively large doses. It was regarded as important to thoroughly dilute

the bromides in order to facilitate their absorption—the dose to be taken in a wineglassful or half a tumblerful of water. Under no circumstances should the bromides be discontinued; they might be *diminished*, but not *stopped* until the word *cure* could be pronounced. They should be continued at least three years after the last attack. The adjunct treatment consisted in the use of measures to prevent the acne to a certain extent, such as the occasional use of arsenic, sulphur-ointment, mercurial plaster, and alkaline lotions; to correct the general debility or slight paresis, by the use of strychnia, nux vomica, oxide of zinc, and quinia; to relieve the dizziness by the inhalation of nitrite of amyl, by stimulants, and by quinia; regulating the patient's diet and hygiene, and the use of cream, cod-liver oil, iron, quinine, phosphorus, strychnia, with nitro-muriatic acid, wine, beer, or whisky. In certain cases such medicines as acted more directly upon the morbid state of the nervous centres were associated with the bromides, and the favourite among those was belladonna. In the treatment of cases of epilepsy in which a definite causative lesion could be made out, the bromides were used simply to combat the habit.

In the treatment of other neuroses, Dr. Seguin had used the bromides sparingly and never continuously. Bromism should not be produced in the treatment of *hysteria*. *Delirium tremens* might probably be shortened by the free use of the bromides.

Many cases of *insomnia*, treated upon the purely hypothetical indication of causing anæmia of the brain, might be much more quickly relieved by chloral, or by a glass of ale, or by correcting indigestion, than by the use of the bromides. Sleep was believed to be due partly to the general waste of tissues and the accumulation in the blood of the products of retrograde metamorphosis, and partly to the exhaustion of the cerebral tissue itself. The anæmia observed in the brain during sleep was regarded as a consequent phenomenon, in obedience to the general law that a tissue in repose contained less blood than one in action.

In the treatment of *insanity*, the use of the bromides was recommended only to meet such indications as a tendency to epileptiform attacks, or abnormal sexual excitement, or great nervousness not caused by delusions. Favourable reference was made to the use of bromide of potassium before administering ether or opium, with the view of preventing nausea and vomiting. Special attention was called to the use of bromide of ammonium in the treatment of *hay-asthma*—used as a gargle and to wash out the nasal passages several times a day with a weak solution of the same salt. The gargle was of the strength of one or two drachms to the ounce of water; the solution for the nares from 10 to 30 grains to the ounce of water.

## DIAPHANOSCOPY: A NEW METHOD OF DIAGNOSIS OF PELVIC DISEASES.

A CORRESPONDENT of the *Ohio Clinic* writes from Dresden, under date March 20, 1877 :

Dr. Justus Schramm, of this city, has perfected an apparatus for the illumination of the organs contained in the pelvic cavity. For some time past, under his direction, I have had repeated opportunities of testing the facility with which the instrument can be employed, and I feel convinced that it must

take a prominent position in the armamentarium of the future gynæcologist.

Thinking that a description of this novelty, called by Schramm a diaphanoscope, might be of interest, I have been at pains to collect some information concerning its history, composition and utility.

In the year 1867, Milliot described to the International Medical Congress at Paris his method, denominated splanchnoscopy, the principle of which was similar to that generally employed in the diagnosis of hydrocele, and by means of which he alleged that he could diagnosticate tumours of the stomach, rectum, ovaries, and even detect unnatural adhesions of these to surrounding organs. He introduced into the stomach or rectum a narrow glass tube, in which were fixed two thin platinum wires, connected by electrodes with a Middeldorff's apparatus externally. When the circuit was complete, the glowing platinum rendered a portion of the pelvic and abdominal viscera translucent. His experiments had been made principally upon human corpses and animals. This report by Milliot proved the incentive to a Russian physician, named Lazarewitsch, to apply this mode of exploration to the human female pelvis. He it was who gave the procedure its present name "diaphanoscopy". His apparatus, as described by himself, consists of a glass tube rounded and closed at its upper extremity, and supplied with a wooden handle. At its farther extremity this cylinder contains two copper wires, terminating in a spiral coil of platinum wire, the whole being connected with a Bunsen's battery of six elements. To prevent the rapid irradiation of heat, the platinum wire is covered with a thin glass cylinder. Lazarewitsch soon improved his apparatus by the substitution of a thin platinum plate for the wire, thus increasing the illuminating power of his instrument, but he utterly failed to prevent the rapid heating of the glass tube; thus it was impossible for him to make a prolonged examination, and he was kept in constant dread of burning his patients, who always began within a few minutes to complain of the unbearable heat. Lazarewitsch described this apparatus as long ago as 1868, but his publication was in the Russian language, which accounts for the greater part of the medical public having never heard of it.

Dr. Schramm first endeavoured, and succeeded with the aid of Stöhrer, in overcoming the mechanical difficulties which prevented the general use of this new aid to diagnosis. The instrument, as now perfected and employed by Schramm, can be kept in the body as long as desired. By an exceedingly simple contrivance he can keep it cool all the time it is being used. The glass cylinder is double—one within the other. Two tubes are connected with the apparatus, one of which carries away the cold water, which, after being brought by the other, flows in a constant stream (something after the plan of a regurgitating catheter) through the space between the inner and outer glass tube. The intense heat from the white hot platinum plate would soon communicate itself to the outer glass cylinder, were it not for the constant stream of cold water which absorbs most of the heat. The two copper wires terminate at the extremity of the inner tube in an ordinary galvano-caustic platinum plate. At the slightest manifestation of pain by the patient, the current can be checked at the battery outside. Stöhrer's improved galvano-caustic battery is the source of the light. It consists of two systems, each containing three carbon and four zinc plates, the fluids being bichromate of potash and dilute sulphuric acid. In

default of this battery, Middeldorff's apparatus will supply a sufficiently bright platinum light.

Diaphanoscopy differs, therefore, from the use of the speculum in this respect, that, by the former plan, the tissues are rendered translucent, while by the latter the cavities are directly lighted from without.

The instrument is best employed in a darkened room. With the right hand fixing the instrument in the vagina, the left may, by the aid of a wooden ring, assist by pressure on the uncovered abdominal wall, in bringing the source of light nearer to the surface. That portion of the abdominal parietes enclosed within the ring is thus spread out and thinned, rendering the light considerably clearer. To explore the pelvis carefully, it is necessary to move the end of the cylinder in all directions possible, and to make a corresponding change in the location of the wooden ring outside. By this combined method of exploration, the greater portion of the pelvic cavity can be examined at leisure. It may seem strange, but it is nevertheless a fact, that, during its employment, the women experience a sensation of cold, rather than heat in the abdomen. The patients are put into all the various positions that seem to be required for a thorough examination.

The abdominal wall, examined with this instrument in the vagina or rectum, appears of a pale reddish colour, somewhat resembling the light from a red lantern. All the organs around the uterus are of this colour, except the ovaries, tubes and round ligaments. These are very faintly translucent. The uterus itself is quite dark or black in colour.

In the normal condition of the pelvic organs the uterus is seen as a dusky oval body, with a dark band extending from each side, and terminating in a still darker-coloured body (the ovary). Running diagonally toward the anterior portion of the pelvis, are narrow strips corresponding to the round uterine ligaments. By pushing the end of the diaphanoscope into the posterior vaginal pouch or fossa of Douglas, the entire form of the uterus becomes visible as a greyish-black body on the reddish-coloured background.

Schramm recently illustrated the value of this instrument by making a diagnosis of undeveloped uterus, with no other information than that afforded by placing the instrument in the rectum and observing the size and form of the organ through the anterior abdominal wall.

The diaphanoscope has also been of great service in the investigation of female vesicle disorders. Calculi have been seen and their size determined.

What benefit may be derived from this plan in the future I cannot undertake to prophesy. Considerable difficulty has been experienced here in getting women to submit for the first time to the use of the instrument. After once having been employed no further obstacles are afterward encountered.

Schramm's experience with the improved instrument is by no means so extended as that of Lazarewitsch with his defective one. The latter alleged that he had recognised neoplasms, cysts, adhesions, subserous lipomata, and pigmentary deposits. Further experience will be required to test the correctness of the statement made by Lücke that lipomata and myxomata, if in situations rendering the transmission of light possible, will be found translucent, while this is not the case with carcinoma or adenoma.



## BRUNTON AND PYE ON CASCA BARK.

AMONG the notes of researches made in the physiological laboratory at St. Bartholomew's Hospital, recorded in the current number of the *Reports* of this hospital, is a paper (an abstract of which appears in the *Proceedings of the Royal Society*, vol. xxv, p. 172) by Dr. Brunton and Mr. Pye on the physiological action of the "Casca" bark. This bark is one of the "ordeal" poisons extensively used by the natives all along the western coast of Africa. On each side of Calabar, where the well-known bean is employed, to the north in Sierra Leone, and in Angola, to the south, use is made instead of the bark of a tree, *Erythrophloeum Guinense*, belonging to the same natural order as *Physostigma*—the *Leguminosæ*. There are two modes of employing the test. The victim swallows a few grains of rice and a strong infusion of the bark. If he vomit all the rice, and be not purged, he is innocent; but if he be purged he is declared to be guilty. Or else, after drinking the infusion alone, he is made to walk in a stooping posture under a number of boughs implanted archwise in the ground. If he can pass through the series without stumbling, he is innocent, but if he stumble, he is guilty, and forthwith despatched. [An interesting description of this ordeal is given in *Angola and the River Congo*, vol. i, pp. 63, *et seq.*, London, 1875, by Mr. Monteiro; to whom Dr. Brunton was indebted for the Casca bark with which he experimented. *Rep.*].

A watery extract of the bark has no effect upon the growth of seeds, of vegetable moulds, of bacteria, or of such invertebrate animals as snails. On cold-blooded vertebrates its action, though less marked than upon the warm-blooded, is nevertheless distinct, being a failing of muscular power with irregular movements. Birds are easily affected, a small dose sufficing to produce vomiting, irregular movements, difficult respiration, and finally death. In dogs and cats the action is similar. Consciousness seems to be retained to the last. The symptoms thus agree, with the exception of the absence of delirium and of an alternate dilatation and contraction of the pupils, with those recorded in an American journal by Santos.

It is stated that the priests who prepare the infusion can produce either effect at will, a clear infusion being given to those whom they wish to prove innocent, while to those who have not propitiated them with "baksheesh", a potion from which the dregs have not been strained is given. This, however, is not clearly proven by the experiments of Dr. Brunton. The purging is due to a local action of the poison, as it did not occur after its subcutaneous administration; being, moreover, the effect of an increased peristalsis rather than of an excessive secretion. Vomiting, on the other hand, occurred, whether the poison was administered hypodermically, or through the mouth; being due, in the former case, not to the action of the drug upon the vomiting centre in the medulla oblongata, but rather to a direct irritation, *viâ* the blood, of the sensory nerves of the stomach. The staggering gait and paralysis observed in man, and in dogs and cats, after administration of the drug, was shown by experiment to be due neither to direct action upon the muscles themselves, nor indirectly through their motor-nerves, nor through the brain or spinal-cord, but to be caused by a disturbance of the circulation. The action of casca upon the heart is almost exactly like that of digitalis as described (*Proceedings of the Royal Society*, vol. xiv,

p. 270) by Fagge and Stevenson; the number of pulsations being diminished, and the ventricle becoming irregularly connected. It further resembles digitalis in its action upon the vagus, a moderate dose injected into the jugular vein retarding the heart's action, a further dose greatly quickening it, while by another large dose it is again inhibited; this final result being due to the action of the drug upon the ganglionic apparatus within the heart itself. Casca has an extraordinary power of contracting the arterioles, since, after its administration, the blood-pressure does not sink, as usual, during the cardiac diastole, so that the tension in the arterial system is abnormally great. Digitalis again brings about like results; but the mode of action seems to be different, for, while this drug acts primarily upon the vaso-motor centre in the medulla oblongata, casca, on the other hand, has a more local action upon certain extramedullary vaso-motor centres in the neighbourhood of the vessels. Casca, moreover, closely agrees with digitalis in the mode of its diuretic action upon the kidneys; and it will probably be found, should it be employed as a therapeutic agent, like the latter drug, to have a cumulative action. The respiration is quickened by casca, but this drug does not appear to have any influence upon the temperature of the body. Upon the eye it has apparently no action whatever.

As regards the probable use of casca in medicine, it has been shown that its action is chiefly exerted upon the stomach, and on the circulatory and urinary apparatus. Were it not for its inconvenient action upon the former organ, it would be preferable to digitalis, in being a drug which would affect the heart without eventually producing sickness. It will, however, be probably found useful in mitral disease, and the dropsy consequent therefrom. As combining the virtues both of digitalis and ergot, it may prove to be a hæmostatic more powerful than either of these drugs.

J. C. GALTON.

## CUNNINGHAM AND LEWIS ON THE DELHI BOIL (ORIENTAL SORE).

UNDER the title of Oriental Sore, Messrs. Lewis and Cunningham\* discuss the causes and nature of an ulcerative condition of the skin which is prevalent at Delhi, and which has therefore been frequently described by previous observers as Delhi boil. They show by statistics that "abscess and ulcer" rank high amongst the diseases for which European and native troops are admitted to hospital at various military stations in India, and that, although high total admission and high ulcer rates generally go together, this is not invariably the case.

At Delhi, the prevalence of abscess and ulcer is found to have a direct relation to the source of the drinking water, the troops who are supplied with water from a clean part of the river Jumna enjoying comparative immunity, whilst those who use water from wells suffer severely. An analysis of the well-water showed that it is characterised by excessive hardness, and by the presence in it of large quantities of salts.

Delhi boil is generally associated with the boils and sores which are not only common in India, but are also common in Bagdad, Aleppo, Egypt, and other parts of Africa. Dr. Geber has, however, lately

\* *The "Oriental Sore", as observed in India.* A Report by T. R. Lewis, M.B., and D. D. Cunningham, M.B., Calcutta, 1877.

shown that the Aleppo boil is not a distinct disease, and that well known affections of the most varied nature are grouped together under that name. The designation Aleppo or Delhi boil ceases, therefore, to correspond to the precision of scientific nomenclature, and of course the proposed term "oriental sore" is equally useless. The position at present in regard to this question is, to determine whether there is such a thing at all as a Delhi sore. After lupus, syphilis, furunculus, and chronic ulceration maintained by local irritation or constitutional debility have been excluded, is there at Delhi a form of sore that can be diagnosed as something not already classified by European observers? Messrs. Lewis and Cunningham think that there is not, and that the disease commonly observed at Delhi "is in no way distinguishable from one or other of the various forms of lupus." The liability to lupus is induced by the character of the drinking water.

The disease, or sore, which they diagnose as lupus is described as "varying in extent from a few lines to one or even two inches in diameter, but the average area occupied by it is about the size of a shilling or half-a-crown. It is not localised to any particular region of the body, several parts of which may be affected at the same time. The forehead, the cheek, the wrist, the back of the hands and feet, the points of the elbows and the knees, and, not unfrequently, the side of the nose between the bridge and the inner canthus, are the sites where sores are most commonly found. A sore may start from either one or from several centres, which, gradually approaching each other, eventually coalesce and become covered by a single scab. Sometimes a shiny, slightly elevated, wheal-like belt of indurated tissue may be observed to encircle the sore, covered with a thin cuticle, and presenting an appearance not unlike that of the indurated tissue forming the margins of a lachrymal sinus, or other fistulous orifice." A chromo-lithograph is appended to the description, showing two sores on the back of a Sepoy's hand, and also illustrating the naked eye appearance of a vertical section through the whole thickness of one.

Whilst there can be little doubt that Messrs. Lewis and Cunningham saw unmistakable cases of lupus amongst the cases of "Delhi boil", it is unfortunate that neither their description of the general features of the malady nor the coloured drawing of the Sepoy's hand satisfy the legitimate requirements of an accurate diagnosis. The reader is still left with no other resource than to rely on the authority of the observer. It is unnecessary to remark that, as long as this is the case there will still be contradictory opinions held on the subject, no matter how much the authority is entitled to respect.

The results are given of an able and careful investigation into the minute anatomy of a sore. The histological part of the memoir is interesting from the point of view of general anatomy as well as in relation to this particular question, but it can hardly be said to identify the one examined as an example of lupus. The authors endeavour to show indeed that the elements observed by them correspond to those described by Virchow as characteristic of that disease, but they are in reality not different in any important respect from those which are found in various chronic inflammatory affections of the skin.

Messrs. Lewis and Cunningham have done good work in dispelling many of the ideas that have mystified the profession into believing that there is a distinct sore peculiar to Delhi, but they have not yet satisfactorily shown that the so-called "sore" is always

a form of lupus, or that lupus in India is in any way dependent on the quality of the drinking water.

G. THIN, M.D.

## ANATOMY AND PHYSIOLOGY.

OVSJANNIKOV ON A DIFFERENCE IN THE REFLEX FUNCTIONS OF THE MEDULLA OBLONGATA AND THE SPINAL CORD IN THE RABBIT.—Ovsjannikov (Ludwig's *Arbeiten*, 1874, p. 457) finds that *ordinary* reflex movements, *i.e.*, those that imply a conduction from the anterior to the posterior extremities, and *vice versa*, still continue when the medulla oblongata is divided transversely six millimetres above the apex of the calamus scriptorius, while they are only *local* when the section is made one millimetre lower down. If the section be made to the middle line, five millimetres above the calamus scriptorius on the left side, and six millimetres on the right, general reflex movements are still present; with this modification, however, that on stimulating the left leg the right arm contracts more strongly than the left. The seat of the general reflex movements very probably does not lie in the middle line. The fact that, after strychnine poisoning and section of the medulla below the calamus scriptorius, general tetanus can be produced by almost any sensory stimulus, seems to speak against this localisation of general reflex movements. But this tetanus is fundamentally different from the coordinated reflex movements, which vary with the strength of the stimulus.

WM. STIRLING, D.Sc., M.D.

GRENACHER ON THE STRUCTURE AND FUNCTIONS OF THE EYES OF ARTHROPODA.—Dr. Grenacher, in an additional part of Zehender's *Monatsblätter*, gives a paper on the structure and functions of the eyes of arthropoda. He shows that both the simple eyes, or stemmata, as they are called, and the compound eyes, are so constructed that there can be no doubt they are modifications of the same primitive type, a type that is seen in the simple eyes of many larval forms. From this as a point of departure, he thinks that the two kinds of eye have been evolved by two opposite modes of variation; in the case of the simple eyes the lens has been more and more developed and adapted to form an inverted image upon a recipient retina, as in vertebrates; the highest perfection of this form of eye is seen in the higher spiders. On the other hand, the compound eyes of insects and crustaceans have been perfected, according to the author, by the gradual reduction of the percipient structures of the retina, until from four to seven only remain in each ocellus or element of the compound eye, and by the more or less perfect fusion of these into a single organ, called the rhabdom, which is so placed that it receives only the central rays of the pencil of light. Although each facet of the compound eye is lenticular, the image which is produced by this lens lies far in front of the retina, and the abundant pigment is so arranged that all the peripheral parts of the pencil are cut off from the percipient element of the retina; only the central unrefracted portion of the ray being permitted to impinge upon it. Dr. Grenacher thus returns to the theory of Johannes Müller, the theory of mosaic vision. According to this theory, each facet of the compound eye has a single percipient element and receives the light from



that portion of the field of vision which lies opposite to it and from no other, all the oblique rays being absorbed by the abundant pigment which forms a long narrow tube in front of the recipient structure. The whole compound eye forms a hemisphere, or in some cases more than a hemisphere, the recipient elements of the retina being arranged radially from its centre, so that rays are received from the whole sphere which surrounds the insect; and the entire picture is made up of a number, sometimes as many as 30,000 or more in each compound eye, of separate impressions, one corresponding to each facet of the cornea. Although this view of Müller's has, as the author observes, found but little favour, since Gottsche called it in question in the year 1852, there can be little doubt that Dr. Grenacher has entirely proved that it is the true explanation of the function of the compound eye of the arthropoda, a conclusion in which none will fail to concur who read this interesting and important monograph.

B. THOMPSON LOWNE.

TURNER ON THE LOBULES AND CONNECTIVE TISSUE OF THE CAMEL'S LIVER.—Professor Turner (*Journal of Anatomy and Physiology*, vol. xi, pt. ii) draws attention to the relation existing between the connective tissue and the lobules in the camel's liver, his observations having been made on a specimen imperfectly injected from the hepatic vein with size and vermilion, and mounted thirty years ago by Goodsir. The free surface of the liver, which was partly smooth, and partly divided by furrows into numerous irregular lobelets, was mapped out into definite polygonal lobules, the outlines of which were marked by intermediate depressions. Sections of the liver presented a similar distinct lobular subdivision. The capsule of each lobule, distinctly visible to the naked eye, was blended with that of adjacent lobules, and was thicker, where three or four came into contact. From it slender bars of connective tissue of microscopic dimensions were prolonged into the interior of the lobule for some distance, between the columns of secreting cells. Towards the centre of the lobule these lost their fibrillated structure, and became membrane-like. In the peripheral parts of the lobule, the connective tissue framework could be demonstrated distinct from the capillary blood-vessels; in the central part, however, the author was unable to state whether it was blended with the capillaries or not; neither could he ascertain for certain its relation to the interlobular and intralobular bile-passages.

E. CRESSWELL BABER, M.B.

STRASBURGER ON PROTOPLASM.—The *Quarterly Journal of Microscopical Science* for April, contains an interesting résumé of Strasburger's views by Mr. Sydney Vines. Alluding to the general opinion of the frequent occurrence of a hyaline ectosarc enclosing a granular endoplasm, and the important observation of Hofmeister that the former is firmer and denser than the latter, Strasburger states his opinion that the ectoplasm is a product of distinct differentiation. Hofmeister, Lachs, and other writers, have noted a radial striation in the ectoplasm, and Strasburger has verified these statements in the osmic acid preparations of the zoozonia of *Vaucheria sessilis*, where the striations are due to small rods with relatively large interstices between them filled with a watery protoplasm. From these dense portions the cilia arise, the development of which he has carefully studied. Illustrations are then given of the same appearances in instances drawn from the

domain of animal histology. He confirms Heitzmann's observations as to the presence of a reticulated structure in the endoplasm, and shows that a distinction can be drawn between its external and internal portions—the former being of greatest density, as proved by the difference in the imbedded granules and the more mobile fluid state of the central portions. During division of the nucleus, the hyaline basis of endoplasm takes a radial direction which he regards as indicative of a repulsion of the granules by the poles of the nucleus. Further differentiation of endoplasm accompanies the chlorophyll formation. Illustrations of this differentiation of endoplasm are next given from the lower animal organisms, and the author then sums up his conclusions with regard to protoplasm as follows. 1. It probably consists of minute solid particles invested by watery areas; the more watery, the more mobile will this protoplasm be; the more dense, the more marked will the properties of the solid particles become. 2. Protoplasm is a substance of great structural complexity, and the "depository of the specific peculiarities of the future organism".

By what mechanism heredity is established we know not, and, although we assume that further developmental changes are but chimes responsive to the impression of the environments, we know not the links in the chain whereby the melody is produced. The molecules, which Strasburger thus regards as the structural units of protoplasm, correspond closely to Herbert Spencer's "Physiological Units".

BEVAN LEWIS.

JOLYET AND REGNARD ON THE RESPIRATION OF AQUATIC ANIMALS.—MM. Jolyet and Regnard, having reviewed the methods which have been employed in investigating the above subject, describe, in the *Archives de Physiologie* (Feb. 1877), their apparatus, which they have used in a series of experiments, the results of which are to form the subject of another paper. They think that, heretofore, the animals have not been kept in a state of normal physiological life. With the object of attaining this condition, they constructed an air-tight cistern, through the water of which a circulating current of air can be pumped by clock-work or a water-motor, in such a way as not to alter in the least the pressure exerted by the air in the cistern. When the apparatus is working, the efferent air, on its way to the pump, is conveyed through a potassa flask, in which the carbonic acid is absorbed and remains. The loss sustained from the animals consuming the oxygen is replaced by passing pure oxygen into the cistern from a flask, of known volume, fitted to the cistern. The experiment may continue any length of time; and, when concluded, the gas-changes which have taken place from the animal's respiration can easily be calculated. The amount of oxygen used is read off on the flask; the amount of carbonic acid in the potassa flask is estimated, and then, from a comparison of the analyses of the water and air of the apparatus, at the beginning and end of the experiment, the exact change of gas can be calculated.

#### RECENT PAPERS.

The Anatomy of the Branches of the Carotid Artery. By Dr. Zucker-Kandl. (*Allgemeine Wiener Medizin. Zeitung*, May 15.)  
Structure and Growth of the Epithelia of the Cornea and Skin. By M. Adrien Charpy. (*Lyon Médical*, June 3.)

# MEDICINE.

HERZ ON THE DURATION OF LIFE AFTER PERFECT OCCLUSION OF THE OPENINGS OF THE BILE-DUCTS INTO THE INTESTINE.—In Nos. 6 and 7 of the *Berliner Klinische Wochenschrift* for 1877 (February 5 and 11), Dr. Herz, of Königsberg, narrates the following case as a contribution in answer to the question of how long a man can live after the escape of bile into the duodenum is entirely prevented by the occlusion of the natural channels. He apologises for deficiencies in the narrative, by explaining that the patient was an old man about 71 years of age, to whom every sort of physical examination was an abomination; who suspected, even at the last, when he longed to escape from the death he dreaded, that every new examination of his case would be a fresh danger for himself; and who would only allow even the discharges to be examined after he had been propitiated by compliments and apologies. The case is briefly as follows. This patient had previously enjoyed good health, but, in July 1871, his motions became of very light colour. There was no diarrhoea, the bowels acting about twice daily; but enormous quantities of fæces were passed. At this time there was neither pain nor distress. Late in the autumn he had a sort of intermittent fever, which did not yield to quinine. The paroxysms were at their worst between 5 and 7 p.m. daily. This lasted till December. From this time the paroxysms became irregular, sometimes omitting several days, and recurring at odd times. There was no splenic enlargement. In the Christmas week, after a pause of several days, there was an unusually severe paroxysm of the fever, and on the next day he was jaundiced. The stool was perfectly colourless, and from this date till the death of the patient in April 1874, or  $2\frac{1}{4}$  years later, there was never any bile in the intestine. On the first day the urine was of the colour of dark beer, but did not give good reactions with the tests for bile-pigment. After the jaundice had been very intense for six days, the skin and conjunctivæ began again to resume their natural colour, and the patient, now free from fever, remained pretty well, except for the absence of bile in the stools. But he had in all eight similar febrile attacks accompanied with jaundice, six before June 1872, one at the end of August, and for the last time in October 1872. They were all much alike; strong fever, with internal rigors, then on the next day intense jaundiced colour of skin and mucous membranes, and slight pigmentation of urine, till about the sixth day, when on each occasion the jaundice disappeared. He took Carlsbad waters. So far as physical examination could be made, there was no enlargement of liver or spleen. Indeed, there was no tenderness over the liver, except for about a couple of days in the  $2\frac{1}{4}$  years. But from the beginning of the attacks till late in the summer of 1873 there was gradual but increasing emaciation. Inguinal hernia was developed on both sides. His strength decreased, and he could not well get upstairs. The latter part of 1873 saw some improvement in his nutrition—he gained flesh and strength. The urine in the intervals of the attacks was of deep yellow colour, often loaded with lithates, and somewhat viscid. But chemical examination did not discover anything remarkable. For some time he became almost totally blind at night. From this also he recovered. He never allowed his eyes to be

examined. From the beginning of 1874 he suffered intense pain in his right foot, especially towards the external malleolus. For a long time there was nothing to be seen. At last there was an elastic tense swelling on the dorsum above the toes. This after a time became dark red and more swollen, later bluish and black, and was pretty sharply severed from the healthy parts by an inflamed line of demarcation; it extended in time above the ankle. On April 21 he became comatose, recovered consciousness towards night, but stertor returned in sleep, and he died in the morning. The *post mortem* examination disclosed the following conditions. The liver was not enlarged; it lay behind the margin of the ribs; below it, concealing the stomach, was the distended transverse colon, which had become adherent to the fundus of the gall-bladder, and communicated with it by a small smooth opening, of the size of a pea; the wall of the colon at this spot was funnel-shaped. After removal of the colon, a swelling or tumour about the size of the fist was disclosed, embracing the ligamentum hepato-duodenale. This tumour was in part soft and fluctuating, and in part seemed to contain some hard foreign bodies. A probe passed from the duodenum into the ductus communis choledochus, entered this tumour; and it was afterwards found that the tumour was really the dilated common bile-duct, filled with biliary concretions. It measured 3 inches in length, and from  $2\frac{1}{2}$  to  $2\frac{3}{4}$  inches in circumference. Its contents consisted of a granular pultaceous reddish-brown mass, containing several small gall-stones, and one of the size of a walnut. This had a thimble-like shape, with a broad, but irregular base. There was ulceration in the interior of the sac; there was one ulcer almost as large as a dollar, which had laid bare the pancreas, and had formed a communication or fistulous opening into the duodenum about one-third of an inch in diameter. The gall-bladder was small and collapsed. The hepatic bile-duct was nearly as much dilated. The cystic duct was shortened, and adherent to the neck of the gall-bladder. The bile-ducts in the liver were much dilated, and contained thickened bile. The contents of the bowel were greyish, and in the rectum some part of the bowel was of a greenish grey tint; this tinge of bile-colouring was doubtless to be explained by the recent fistulous opening in the duodenum. The liver was rather small, tough, and somewhat cirrhotic. The intermittent nature of the fever, though remarkable, finds a parallel in the case of a young girl in Professor Hirsch's wards, whose hepatic duct was blocked by a hydatid cyst. Her fever was of intermittent type, the paroxysms being in the afternoon, until the very close of her life, when it became continuous in type, a change explained by the formation of a number of small abscesses in the liver. The periodic occurrence and disappearance of the jaundice also find a parallel in one of Trousseau's cases (p. 191, vol. iii of his *Clinical Medicine*) of jaundice and gall-stones leading to a biliary fistula. (This case will be found at page 247 of vol. iv. of the New Sydenham Society's English edition, translated by Sir John Rose Cormack). It is somewhat singular that in the case recorded here the old man was free from attacks of colic, for the form of the gall-stone showed that it had formerly been in the gall-bladder, and moulded there.

SCHRAMM ON THE METEOROLOGICAL CONDITIONS IN ACUTE PNEUMONIA.—Dr. Adolf Schramm, of Eichstadt, published one paper on this subject in



No. 41 of the Munich *Ärztliches Intelligenz-Blatt* for 1873, showing how the number of cases of pneumonia fluctuated in different years. In Nos. 19, 20, and two subsequent issues of the same journal for 1877, he resumes the same subject, illustrating it with copious tables, one or two of which we purpose to reproduce. In the former papers he showed that the popular opinion that the more northerly and easterly winds prevailed, the more inflammation of the lungs, is scarcely justified by statistics. Taking the 2,192 days of the 6 years 1863 to 1868, he finds that in the district in which his observations are taken there were 321 cases of inflammation of the lungs on 100 of these days, or 14.64 per cent. The percentages for the individual years were as follows: 1863 gave 25.20 per cent.; 1864 only 12.56; 1865 only 11.78; 1866 still less, or only 6.57; and 1867, 19.45; whilst 1868 yielded 12.29 per cent. As regards the prevalent winds, the following are the numbers of cases of pneumonia:—

		Per cent.
With Easterly winds on	556 days were 112 cases or	20.14
„ N.E. „	73 „ 14 „	19.17
„ Northerly „	137 „ 26 „	18.97
„ N.W. „	231 „ 43 „	18.61
„ Westerly „	1011 „ 119 „	11.77
„ S., S.E., and S.W.	184 „ 7 „	3.80

It will thus be seen that, allowing for the time, there are most cases of pneumonia with E. and N.E. winds, but in less overwhelming proportions than might have been expected. As regards this there were great differences in the several years. This point is also proved by tables. Dr. Schramm gives a long table of the mortality of pneumonia cases from the year 1854 to 1868 inclusive, from which we extract the following summary:—

Month.	No. of cases of Pneumonia.	No. of deaths from ditto.	Percentage.
January .....	56	8	14.28
February .....	83	11	13.25
March .....	84	9	10.71
Total for winter quarters.....	223	28	12.55
April .....	92	5	5.43
May .....	70	5	7.14
June .....	36	4	11.11
Total for spring quarters.....	198	14	7.07
July .....	19	1	5.26
August .....	14	3	21.43
September .....	13	1	7.69
Total for summer quarters.....	46	5	10.86
October .....	14	4	28.57
November.....	30	5	16.66
December .....	43	6	13.95
Total for autumn quarters.....	87	15	17.24

From this table it appears that October and June are the most fatal months for pneumonia. This is, however, on a careful examination of the cases, shown to depend upon other causes, such as age, &c., in great measure, and not on the climatic conditions. For this reason we forbear to go further into the question, referring the reader to the papers themselves. One more table, however, must be quoted, as showing the influence of age and sex upon the mortality of pneumonia. It includes 554 cases of the disease, and is as follows:—

Age in years.	MALES.			FEMALES.			BOTH SEXES TOGETHER.		
	Cases.	Died.	Per-centage.	Cases.	Died.	Per-centage.	Cases.	Died.	Per-centage.
0—1	6	0	0	5	1	20	11	1	9.09
2—5	21	1	4.76	10	0	0	31	1	3.22
6—10	44	1	2.27	34	0	0	78	1	1.28
11—15	23	1	4.34	7	0	0	30	1	3.33
16—20	36	0	0	7	1	14.28	43	1	2.32
21—30	45	1	2.22	26	2	7.69	71	3	4.22
31—40	49	5	10.20	31	4	12.9	80	9	11.25
41—50	47	3	6.38	33	8	24.24	80	11	13.75
51—60	45	5	11.11	29	5	17.24	74	10	13.51
61—70	18	6	33.33	25	8	32	43	14	32.55
71—80	2	1	50.	8	6	75	10	7	70
81—90	2	2	100.	1	1	100	3	3	100
Totals.	338	26	7.69	216	36	16.66	554	62	11.19

As regards the site or seat of the pneumonic inflammation, which has an important bearing on the mortality, we find in the 11 years, 1858 to 1868, out of 449 cases, 274, or 61.02 on the right side; 152, or 33.85 on the left side; which is 27.17 per cent. less than the former; 23, or 5.10 per cent. were on both sides, implicating both lungs; 42, or 9.35 per cent. were of one whole lung; 25 of these, or 5.56 per cent., were on the right side; 17 of these, or 3.78 per cent. were on the left side, or 1.78 per cent. less than on the right side; 86, or 19.15 per cent., were of an upper lobe; 68, or 15.14 per cent. of these right-sided, and 18, or 4 per cent. of these left-sided, or 11.14 per cent. less than on the right side; 298, or 66.36 were of the lower lobe; 181, or 40.31 per cent. of the right side; 117, or 26.05 per cent. of the left side, or 14.26 per cent. less than those of the right side.

Of these 449 cases 46 died, or 10.24 per cent.; 36 out of 274 pneumonias of the right lung, or 13.13 per cent., died; whilst only 7 out of 152 pneumonias of the left lung, or 4.60 per cent., died, or 8.53 per cent. less than those of the right side. Of the 42 pneumonias of a whole lung 11 died, or 26.09 per cent., as follows: 7 out of 25 of the right lung, or 28 per cent.; 4 out of 17 of the left lung, or 23.52 per cent., thus 4.48 per cent. less than the right-sided. Of 86 pneumonias of the upper lobe, 11 died, or 12.79 per cent.; or analysing these, of 68 right-sided, 10 died, or 14.70 per cent.; whilst of 18 left-sided only 1 died, or 5.55 per cent. (5.55 per cent. less). Of 298 pneumonias of the lower lobes 21 died, or 7.04 per cent., of which 19 deaths out of 181 were right-sided, or 10.49 per cent., whilst of 117 pneumonias of the left side only 2 died, or 1.02 per cent., being 9.48 per cent. less.

Of 23 cases of double pneumonia 3 died, or 13.04 per cent. These figures were again modified by age, sex, and other conditions.

[In reviewing these tables and remarks of Dr. Schramm, one feeling of regret enters the mind. It is this, that the results of so much labour should be so small. We have here nearly 20 pages with elaborate tables, and yet there is scarcely a single conclusion to be drawn from them all, except with the greatest reserve. The nature of medical statistics, and the relative smallness of the numbers, to those required by the nature of the conditions (which, according to La Place, Herschell, and others, should be little less than 10,000) have partly to answer for this. But another reason may be found in the want of uniformity of plan. At one time our author takes 11 years, then 15, and so on. One set

of figures is drawn from 321 cases, another from 554, and another from 449 cases. When will medical statisticians endeavour to simplify their figures by taking equal numbers of cases all through a given enquiry? Suppose, for example, that 10 years, or 300 cases, had been taken as the basis of enquiry throughout, some comparisons might then have been fairly made. As it is, the shifting, varying numbers leave a painful feeling of uncertainty in the mind, and the still sadder reflection that an immense amount of conscientious and intelligent painstaking labour has been in great part wasted for want of *uniformity of plan*. *Rep.*]

TRIPIER ON RETARDATION OF THE CAROTID PULSE IN AORTIC INSUFFICIENCY.—In the *Revue Mensuelle de Médecine et de Chirurgie* for January 1877, Dr. Raymond Tripier, Physician of the Hôtel Dieu of Lyons, contributes a paper on the comparative retardation of the carotid pulse, as compared with the systole of the heart in cases of incompetency of the aortic valves. He says that his attention was first drawn to the subject in 1868, by finding a striking retardation of the radial pulse in a patient suffering from this form of heart-disease. But the same patient showed a considerable interval between the cardiac systole and the carotid pulse. The interval in the case of both vessels far exceeded what he had ever noticed in the most anæmic cases. A second case of the same kind induced him to consult the authors who have written on this subject. He found that Henderson had already proposed it as one of the signs of aortic insufficiency.\* The editors of the *Archives* observe that Marc Despine made especial note of the retardation of the pulse in peripheral arteries in the sittings of the Academy of the 19th July, 1831. This is, however, not quoted in their published memoirs, though it may be mentioned in the *Comptes-rendus* of the session. Very few authors mention this symptom. Valleix and the authors of the *Compendium de Médecine* merely quote Henderson. Aran (*Archives Gén. de Méd.*, Nov. 1842) says that in spite of trials he has not been able to confirm this symptom. Requin (*Traité de Pathologie Médicale*, 1844) treats it as a normal phenomenon. Grisolle, in his *Pathology*, published in 1851, p. 306, quoting the English physician, says, "This is not peculiar to aortic insufficiency; this defect of isochronism between the contraction of the ventricle and the systole of the peripheral arteries is a physiological phenomenon which can easily be verified whenever the circulation goes on with sufficient slowness." Forget (*Précis des Maladies du Cœur*, 1851, p. 184) ascribes it to the feebleness of the heart's impulse: whilst Friedrich (*Treatise on Heart-Diseases*, French translation, by Lorber and Doyon, 1873) dissents from Henderson without giving any reason. Dr. Soulier obligingly referred Dr. Tripier to the opinion of Dr. Francisco Roncati, that the retardation of the pulse, especially in the arteries most remote from the heart, is a characteristic symptom of aortic insufficiency (*Indirizzo alla diagnosi delle malattie del petto del ventre e del sistema nervoso*, Naples, 1868). He says, "It is a necessary consequence of the increased calibre and elongation of the arteries, but as this is met with only in the later stages of the disease and in the most severe cases, it is not astonishing that most observers

have overlooked it. And moreover it is said to occur also in cases of advanced atheroma of arteries, in those of great relaxation of the arterial tunics, dependent on chlorotic and oligohæmic conditions, and in very large aneurisms and chronic lead-poisoning." We see, therefore, that Henderson believes this retardation of the peripheral pulses to be one of the best signs of aortic insufficiency; Roncati believes it to be met with only in severe cases; whilst Friedrich rejects it summarily, and Grisolle and Requin consider it a physiological phenomenon. This led Dr. Tripier to re-examine the subject. That the radial pulse is a little behind the cardiac systole, is an unquestioned physiological fact; that cachectic states, anæmia, chlorosis, and the like, and states of gradual recovery from severe fevers, etc., render it still more evident, is also admitted. But it would seem that there are some cases of aortic insufficiency in which this symptom is so strongly marked as to differ widely from the slight retardation above mentioned, and these cases cannot well be confounded with the others. Dr. Tripier has examined a great number of patients with the view of ascertaining if this retardation of pulse be common. For the most part his researches have given negative results in cases free from aortic insufficiency, although four large aneurisms of the thoracic aorta and one of the innominate artery were included. He therefore concludes that neither the physiological retardation of the carotid pulse, as regards the cardiac systole, nor the same phenomenon as a pathological condition, can be recognised by the hand except in cases of aortic insufficiency. Owing to the distance of the radial pulses, the retardation of these is more easy to detect, and may be met with, as stated above, in a number of conditions, and may perhaps be recognised by keen observers, even in health. As regards the carotid, Dr. Tripier's method is as follows. The observer should place himself on the right side of the patient and apply the palm of the right hand, or rather the whole hand, face downwards, on the region of the heart, so as to clearly catch the impulse of the heart's apex in the centre of the hand; in this way a very distinct impression of the cardiac systole is obtained. Then he should place the thumb of the left hand on the right carotid, at the point usually selected for ligature, at the side of the larynx, whilst the other fingers and the palm of the hand rest on the latero-posterior region of the base of the neck. It is very important to feel the artery well under the thumb, and that it should not slip aside. When quite satisfied that one feels both pulsations, attention should be paid to their being isochronous or not. The position of the patient seems immaterial. He may be seated, or lying down, with the head and shoulders a little raised by pillows. The sitting position is preferable, when the apex-beat is rather feeble. Two causes of error may be easily avoided. The first is the venous pulse of the internal jugular vein; if the carotid be fairly felt, by firm pressure downwards, there can be little danger of this mistake. The artery may be explored a little higher up, if at all in doubt. The alternate auricular and ventricular systoles of the heart might deceive a careless observer in some cases, or if only one or two fingers were used for the heart; but if the whole hand be applied between the fifth and sixth costal interspaces (usually below the nipple) the sharpness and suddenness of the ventricular systole can hardly be mistaken. Dr. Tripier publishes his cases of aortic insufficiency examined in this way, but it will be sufficient for us to give the general

\* William Henderson, *Edinburgh Medical and Surgical Journal*, October 1837, quoted in the *Archives Gén. de Méd.*, 1837. iime série, tom. xv, p. 409.



results. He gives 26 cases (13 pages are devoted to the histories). In all there was a diastolic bruit, and in 17 of them there was a double blowing murmur, whose point of intensity was the base of the heart. In most, the other well-known symptoms of aortic insufficiency were present. There was retardation of the carotid pulse in 14 of these cases, though it was slight in three of them. There were 13 *post mortem* examinations in the 26 cases, or in all but one of those who died. In six of these the retardation had been noticed in life, whilst in seven the carotid pulse was synchronous with the apex-beat. In these the incompetency of the aortic valves was but slightly marked, whilst in the other six, in which the carotid pulse was retarded, there was great incompetency. In four there was a triangular space left by the separation of the valves. Those cases in which there was synchronism and but little incompetency, were all cases of atheromatous degeneration. The others were chiefly due to more acute causes (as rheumatism, endocarditis, etc.). Whether, therefore, we take the whole number of cases investigated by M. Tripier, or only those in which there was a necropsy, the results are almost identical. In 14 of the whole 26 patients, and in six of the 14 necropsies, there was marked retardation during life of the carotid pulse, as compared with the cardiac systole, or in about half the cases. M. Tripier thinks the difference makes a clinical variety. The first class, with the retardation, are generally less than 40 years of age, are rheumatic subjects, and all the cardiac symptoms, Corrigan's pulse, etc., are well marked, and there is tendency to sudden death. The second class, with synchronous carotid and apex-beat, are over 50 years of age, have dyspnoea, cough, some oedema of the feet, and present renal, pulmonary, or bronchial complications, rather than purely cardiac symptoms. These cases, though severe, will probably live longer than the others. M. Tripier quotes some experiments made by him (admittedly somewhat imperfect) which lead him to the conviction that this retardation is not entirely due to a diminished blood pressure. In one of his cases he obtained tracings of the pulses which showed that the judgment of the hand was not fallacious. The other experiments were made with a *schema* or artificial circulation.

ROSENSTEIN ON THE PULSUS BIGEMINUS.—In the *Berliner Klinische Wochenschrift* for May 14th (No. 20), 1877, Professor Rosenstein, of Leyden, records a case in which this pulse was noted on the sixth day of a pneumonic attack, which ended in red and then grey hepatisation of the upper and middle lobes of the right lung, with fibrinous (plastic) bronchitis, and oedema of the lower lobe of the right and a great part of the left lung. The patient died four days later. In the intervals the pulse-tracings showed first the bigeminal, then a trigeminal and alternating character, and lastly became quite regular in its character. At the *post mortem* examination the other organs were fairly healthy, though the heart exhibited a very slight amount of brown degeneration, with pigment-granules. At first sight, says Dr. Rosenstein, the case seems to confirm Traube's view of the fatal prognostic character of the pulsus bigeminus. But since four of the seven published cases\* turned out favourably, we should scarcely be

warranted in so doing. The clinical cases published, and the experiments which support them, do not show that the symptoms of paralysis of the spinal inhibitory centre were present in any one case except Traube's own. The case quoted above shows that the heart regained its normal rhythm just as the control of the spinal inhibitory centre was lost (for the pulse became 100 in the minute, and the temperature was 101.2° F.). Careful consideration of cases of digitalis poisoning and carbonic oxide poisoning teaches a similar lesson. Knoll (*Sitzber. der K. Acad. der Wissenschaften*, Band 401, Abth. iii) remarks that if the pulsus bigeminus were due to the paralysis of the spinal and the irritation of the intracardial inhibitory centres in poisoning by digitalis, followed by section of the vagi, then the same pulse should be noted when the vagi are cut first, and the digitalis given afterwards. But it is not so. Knoll could obtain this pulse by increasing the intracardial blood-pressure, either directly or in a reflex manner, and this even after the cardiac centre for inhibition had been paralysed by atropin. So, too, in cases of digitalis poisoning, when the intracardial blood-pressure is increased, which is one of the first effects of digitalis in toxic doses, we find pulse-tracings of this character of pulsus bigeminus intervening amongst the normal curves. It is therefore to be concluded that this character of pulse depends on an increased blood-pressure within the heart, with irregular contractions of that organ. These irregularities consist in the multiplied alternation of strong, abortive, and occasional or intermittent beats of the heart. In other words, clinical experience tells us that the pulsus bigeminus is a variety of the irregular pulse. Rosenstein remarks that the paper by Sommerbrodt in the fourth part of the 19th volume of the *Deutsches Archiv für Klin. Med.* (April 30) had only reached him as he finished the article. But the conclusion as to the uncertainty, in a prognostic point of view, of this pulse, is confirmed by that paper. The dicrotic pulse of some writers is probably a pulsus bigeminus.

NOTHNAGEL ON THE PREVENTION OF EPILEPTIC SEIZURES.—Professor H. Nothnagel, of Jena, records (*Berliner Klinische Wochenschrift*, October 9, 1876) the case of a married working woman, aged 37, whose mother was subject to violent headaches, and whose aunt was an epileptic. The patient herself after a severe mental shock became an epileptic in her eighteenth year. Ever since, at intervals for the most part of a quarter to half a year, she has been troubled with epileptic fits—which seem from the description to have been typical and severe. Each fit is preceded by an aura, which consists in peculiar and uneasy feelings, beginning in the epigastrium, and mounting to the throat. There was a feeling of suffocation mixed with an indescribable but horrible sensation. She is then forced to sigh, and after once or twice doing this, the feeling mounts to the head, which is then drawn to the right side, she loses consciousness and the fit commences. She only had these feelings once without a fit. But, following the advice of a neighbour, she has discovered a means of stopping the fit, if only she can get the remedy as soon as she feels the aura. The remedy consists in swallowing common salt. Generally speaking, a half or even whole teaspoonful is not enough. She generally puts a "handful" in the mouth, and swallows it by the help of water. Professor Nothnagel, commenting on this case, and on the means

\* Traube in *Berliner Klin. Wochenschrift*, 1872. Fränzel, Henoch, Stricker, in the *Charité Annalen*, 1876. Rosenstein in Ziemssen's *Handbuch* (Band 5, fol. 6, of Eng. Edition), and Riegel (2 cases) in *Deutsches Archiv für Klin. Med.*, Band 18.

mentioned by Brown-Séguard and others of stopping some epileptic attacks, refers to his article *Epilepsie* in Ziemssen's handbook (Band xii) and his "Beobachtungen über Reflexhemmung", *Archiv für Psychiatrie und Nervenkrankheiten*, Band vi). There is, however, a chemical view which has scarcely been noticed, for nearly all the so-called remedies are either haloid salts or have a similar, though more compound, type of formation.

W. BATHURST WOODMAN.

### RECENT PAPERS.

- Cholelithiasis, as a cause of Cirrhosis of the Liver; with Remarks on Argyria. By Dr. A. von Fragstein. (*Berliner Klinische Wochenschrift*, May 7, 21.)
- Enteric Fever in India. By Dr. T. Ruxton. (*Indian Medical Gazette*, January 1.)
- Hemiplegia, consecutive on softening of the Arterial Substances of the Brain. (*Gazette des Hôpitaux*, May 19.)
- Treatment of Albuminuria by Fuchsine and Rosaniline. By M. Bouchut. (*Gazette des Hôpitaux*, May 1.)
- Some practical considerations on the Treatment of Pulmonary Phthisis at Mont Dore. By Dr. G. Richelot. (*L'Union Médicale*, May 26.)
- Diphtheria. By Dr. F. de Ranse. (*Gazette Médicale de Paris*, May 26.)
- Left Hemiplegia, with complete Aphasia: Cure. By M. Mesnet. (*Gazette des Hôpitaux*, May 29.)
- Typhoid Fever, complicated with Cerebro-Spinal Meningitis: Reflections on the nature of Epidemic Meningitis. By M. Lereboullet. (*La France Médicale*, May 26.)
- General Semeiology of the Urine in Typhoid Fever. By Dr. Brochin. (*Gazette des Hôpitaux*, May 5.)
- Mechanism and Pathological Physiology of the modifications of Intra-Cardiac Organic Scuffles. By M. Buffer. (*Le Progrès Médical*, Nos. 12, 16, 18.)
- On the Cestoid Worms of the Human Subject and their Treatment. By Dr. Laboulbène. (*Bulletin Général de Thérapeutique*, May 15 and 30.)

### SURGERY.

THEILHABER ON SYMPTOMS OF STRANGULATION WITHOUT THE EXISTENCE OF A HERNIA.—Theilhaber (*Aertliches Intelligenz-Blatt*, 7, 1877) says that the peculiar condition of the existence of empty hernial sacs, especially when exudation occurs rapidly in them, gives rise to symptoms closely simulating strangulation of a portion of intestine, and operations have been performed for its relief. There are amongst surgeons diametrically opposed ideas as to the relation between these "empty" hernial sacs and the symptoms of strangulation, and as to the proper method of treatment. He brings forward two cases from his practice. The first was a woman, 42 years of age, in perfect health, who had had for three weeks a swelling in the groin, which at first increased gradually, and afterwards rapidly. During her stay in hospital, all the acknowledged symptoms of strangulated femoral hernia came on, and subsequently the operation of herniotomy was performed; the sac was opened, and a large quantity of thin flaky fluid came out, which was contained in a cavity, divided by septa into five smaller ones, all intercommunicating. In one of these was a cyst about as large as a bean, containing some bright yellow serum. The sac contained no gut; it became contracted at its neck, and a sound could be passed out from the sac, through the latter, into the abdominal cavity. The interior of the sac was slightly injected. The patient quickly recovered.

The second was the case of a man, 22 years of age, who had, in Aug. 1875, a kick from a horse in the lower part of the abdomen; a swelling appeared next day. It was diagnosed as a hernia, and the man wore a truss until June 8, 1876. When he came to

the hospital, he had all the symptoms of a strangulated inguinal hernia, and herniotomy was performed. On cutting through the skin and fascia, on the outer aspect of the spermatic cord, a thick-walled cyst was seen, about as large as a bean, which contained some bright yellow fluid. No other pathological condition of the cord or canal was found. The patient died the next day. At a *post mortem* examination, an ulcer as large as a shilling was found at the lesser curvature of the stomach, about 8 centimètres from the pylorus, penetrating the wall of the stomach, and near it the cicatrix of a similar one. There was about a pint of thick pus in the peritoneal cavity; the peritoneum was much injected, containing shreds of coagulated lymph; the spermatic cord was thickened, but no sac was to be found.

The first of these cases authorises the conclusion that all the complicated symptoms of strangulation can be produced by a hernial sac, which may be destitute of a hernia, although containing exudation-fluid. Theilhaber next quotes a series of recorded cases, where conditions, such as those above-mentioned, gave rise to symptoms for which herniotomy was performed.

From an accurate analysis of cases which he brings forward in the paper, it would seem that the symptoms produced by exudation arise from inflammation of the hernial sac; whereas, in cases where old-standing dropsical sacs were found during operation, the sac was uninvolved in the peritonitis, as in the second case under his care. The explanation of the vomiting, constipation, small pulse, etc., in inflammation of the empty sac would, probably, be the same in most cases; the same, in fact, as in other forms of intense local peritonitis. The sensitiveness of the peritoneum remains in the hernial sac, when external to the abdominal cavity, and inflammatory irritation in the same would, by reflex action, affect the nerves passing from the brain and spinal cord to the viscera, as inflammatory irritation of the peritoneum would within the abdominal cavity. It may be that, in some instances, the accumulation of fluid in the empty sac causes the peritoneum, with which the dropsical sac is associated, to be drawn outwards. In a sac thus formed, a knuckle of intestine or a portion of its wall has been included, and in this manner the strangulation, or "kinking," and the subsequent contraction or closure of its lumen, have come about. With regard to those cases in which symptoms reappear after the operation, the first explanation would seem the best; others, where evacuation of the bowels follows shortly afterwards, and the vomiting ceases, etc., seem better explained by the latter theory.

The diagnosis between inflammation of an empty hernial sac and incarceration of a portion of a hernia in it, is naturally of the utmost importance, as in such a case the taxis could only do harm. That the difficulty of diagnosis is no less than its importance, is evident from certain cases which Theilhaber quotes, where it resulted either in exposure or in opening of the sac. With regard to differential diagnosis, the following points should be noticed. If the sac be filled only by exudation, its form will be more spherical than in actual incarceration, and the tumour is altogether more evenly tense; and, on percussion, a hollow sound is obtained, which would render the existence of an omental hernia improbable. In the first case, there is more frequently an inflammatory oedema of the integument. The pain is more generally extended, whilst in the latter it is



limited to the region of its neck. Theilhaber considers the results obtained by percussion of great value, although they may be deceptive. A sac, containing a small knuckle of intestine and a quantity of fluid, will give a hollow sound; whilst, on the other hand, von Pitha obtained a tympanic resonance in a case of pus in the hernial sac where there was no gut, and he considered that their sound was dependent on the presence of air with the pus.

If the symptoms of strangulation be clearly developed, a communication most probably exists between the inflamed hernial sac and the abdominal cavity. If, on the other hand, the neck of the sac be obliterated, the symptoms are generally limited to local pain, sickness, and feverishness; the more acute peritonitic symptoms being more frequently absent.

He considers that, from the fact of the taxis being frequently unsuccessful, in spite of the communication with the abdominal cavity, we must accept Roser's view, a very probable one, that the exudation has caused a snapping off of the neck of the sac.

The treatment of the inflammation of the empty hernial sac must be immediate, as the application of ice, bleeding, etc.; and, should this be unsuccessful, recourse must be had to puncture. If the possibility of incarceration be precluded, the tumour must be exposed and incision performed.

EDWARD BELLAMY.

#### HEYDENREICH ON FRACTURES OF THE TIBIA.

—The following brief summary is given in the concluding pages of a recently published pamphlet by Dr. Heydenreich, of Paris, on "Fractures of the Superior Extremity of the Tibia."

Fractures of the superior portion of the tibia may be divided into those involving the superior third below the tubercle, and those involving the superior extremity properly so-called.

1. Fractures situated in the superior third of the tibia diminish in frequency as they approach the joint. They may be transverse or oblique, and are associated, in most instances, with fractures of the fibula. This portion of the tibia may present also longitudinal fractures and perforations. These lesions, the subjects of which are usually middle-aged subjects, are not of very frequent occurrence. They are due in most instances to direct violence, though some few cases have been observed in which the lesion has been caused by a fall on the part or by traction. The fractures from indirect violence are situated, as a rule, near the tubercle of the tibia.

These fractures are accompanied by considerable swelling and ecchymosis, due to the large quantity of blood effused. The knee-joint also is frequently the seat of effusion. There is much variety as to the deformity; sometimes the superior fragment is drawn forwards; frequently there is no displacement.

The prognosis is serious. Certain complications, gangrene for one, may threaten the life of the patient, and necessitate amputation. In the simplest cases consolidation takes place very tardily, and demands an average period of three or four months. This peculiarity is probably due to the great quantity of blood effused between surfaces of fracture.

In the treatment, the injured limb should be extended. When there is not very much displacement, however, slight flexion will be preferable, as there is less chance, with this position, of the knee becoming ankylosed.

2. Fractures of the superior extremity of the tibia comprise: 1. Divulsion of the superior epiphysis of the bone; 2. Avulsion of the tubercle, commonly

caused by contraction of the quadriceps muscle; 3. Isolated fracture of one of the condyles; 4. Separation through fracture of the whole of the superior extremity. This last lesion presents several varieties. In the first of these varieties (subcondyloid fracture) the whole of the articular portion of the tibia is detached either whole or broken up into two or more fragments. In some cases, this form of fracture is complicated by perforation. In the second variety of subcondyloid fracture, the superior extremity of the tibia is much comminuted. In the third variety (cuneiform fracture) the solution passes very obliquely from the limit of the articular surface along the upper fourth or even the upper third of the bone, the superior fragment thus presenting the form of a wedge. In this variety of fracture there may be two wedge-shaped fragments (bicuneiform fracture).

Finally, the superior extremity may be the seat of fissures or vertical fractures, which, in most instances, are complicated with solutions of continuity in an inferior portion of the bone. In these different fractures the fibula very frequently remains intact.

Fractures separating the whole of the superior extremity of the tibia are rare, the subjects being generally old people. The lesion may have a direct cause, or be the result of a fall on the feet. It has been proved by experimentation that in aged or debilitated subjects this form of fracture may be caused by muscular action. Its symptomatology, which is rather obscure, consists mainly in swelling of the knee from ecchymosis and intra-articular effusion. The most remarkable deformity is a displacement downwards of the patella, the leg at the same time lying in a plane posterior to that of the thigh. There is also much enlargement of the upper extremity of the tibia. The diagnosis is difficult, as this form of fracture may be readily confounded with contusion, sprain, luxation of the tibia, or fracture of the femur. The prognosis is serious, even when there is no wound. This injury is often fatal, and in cases of recovery without amputation there remains, as a rule, stiffness of the knee-joint.

#### BOETTCHER ON FAT-EMBOLISM OF THE PULMONARY ARTERIES AFTER GUN-SHOT WOUND.

Dr. Arthur Boettcher reports in the *Dorpater Medicinische Zeitschrift*, 1877, p. 326, the case of a student who, on the third day of a gun-shot wound of the left knee that had resulted in acute traumatic inflammation of the joint, suddenly became collapsed, and died within two hours. At the necropsy, made 24 hours after death, the only appearances of any import that were visible to the naked eye were an unusual abundance of subcutaneous fat, and hyperæmia and œdema of the lungs. On microscopic examination of these organs, however, the smaller vessels were found to contain, in addition to much blood, a considerable quantity of fluid fat in a free form. According to the author, as fluid fat cannot pass along the capillaries, plugging had taken place in this case of a portion of the pulmonary vascular system, and from this congestion and œdema of the remaining free portion had resulted. The blood contained in the cavities of the heart and in the left iliac veins was also on examination found to contain free fat, a material never found in the blood under usual conditions. It has been proved by clinical and pathological observations and by experiments that the presence of free fat in the blood is always a fatal condition, as it invariably causes plugging (fat-embolism) of the pulmonary vessels. This form of embolism occurs in most instances after comminuted

tion of bones rich in marrow and after wounds of soft parts that contain large deposits of adipose tissue. Dr. Boettcher believes that in his case the fat found in the iliac veins had been taken up from the wound in the knee-joint, and that this had been the source of the fatty embola in the lungs. There was an extensive infiltration of blood in the very fatty subcutaneous connective tissue in the region of the wounded joint, but there was no possibility of determining whether the oil contained in the femoral vein had been derived from this source. The report concludes with the following allusions to the chief points of interest in connection with this case: 1. The very acute course of the embolic affection. The patient died within two hours from the sudden commencement of the threatening symptoms. The case corresponds in this respect with the results of experiments in which fatty matter in large quantities has been injected into the vascular system of animals. 2. The considerable amount of oil found in the femoral vein. At the first sight, free drops of oil could be seen in abundance on the surface of the blood that had been carefully collected from this vessel. After the blood had been allowed to stand for a time in a glass vessel, a thick superjacent layer of free oil was formed, and presented a marked contrast to the column of red fluid below. The blood taken from the cavities of the heart did not contain so much oil, but still large drops could be seen floating on its surface. 3. The disproportion existing between the quantity of oil contained in the blood and the extent of the lesion in the left knee. In the head of the tibia was a depression about eight millimetres in depth, and about this could be seen some hæmorrhagic infiltration of the medulla. Whether this lesion of the tibia alone could account for the setting free of so much fatty matter as was found in the femoral vein, and whether the fatty embola observed in the lungs could have been derived from this source, must remain doubtful. It is possible that the injury to the thick subcutaneous layer of adipose tissue may have taken some share in the development of the morbid condition of the blood. 4. On microscopic examination of the lung-tissue, the capillaries were found to be filled with more or less elongated globules of oil. Many of the larger vessels also contained similar material; the lumen, however, of each of these was not completely plugged, but presented merely a hollow cylinder of oil. The small vessels in those portions of the lung that were very hyperæmic and œdematous were much distended with blood, but presented no oil-globules. Along the anterior margin of each organ, where there was no congestion, large and numerous branching cylinders of oil were found in the vessels of the pale parenchyma.

**SIDLO ON PARENCHYMATOUS GLOSSITIS.**—Dr. T. Sidlo, of Vienna, reports in the *Allgemeine Wiener Medicinische Zeitung*, Nos. 8, 9, 10, 1877, seven cases of acute parenchymatous inflammation of the tongue. In six of these cases the whole organ was affected; in the seventh the right margin only was inflamed and swollen. Five patients were between the ages of 20 and 25 years; one patient was 30 years old, and the seventh 44 years. All the patients were males. In six out of the seven cases the affection came on in the winter. Three patients, up to the commencement of the attack, had been strong and in perfect health; one patient had recently suffered from intermittent fever, and another from croupous pneumonia; the sixth was the subject of

chronic Bright's disease, and the seventh of pulmonary tuberculosis. The author states that in most cases of this rare affection there is some difficulty in determining the cause. It seems to be very seldom, if ever, due to any traumatic influence. According to Bamberger, sudden chilling is the most frequent cause. In 4 out of the 7 cases reported by Dr. Sidlo, the attack came on shortly after exposure to cold. Not very much importance, however, is attributed by the author to the action of chilling in the *direct* causation of glossitis. Inflammatory irritation of the pharynx and air-tubes is very often produced, he points out, by cold, but the tongue itself is very rarely affected in like manner and from such cause. It is thought that in those cases of parenchymatous glossitis in which there is a true history of exposure to cold, the tongue is not primarily affected, but the inflammation is first excited in the soft parts of the sublingual and submaxillary regions, and afterwards extends to the tongue itself.

In his remarks on the treatment of parenchymatous glossitis, the author advocates the use of the knife in preference to the application of caustics and astringent solutions. The sucking of ice seems to be attended with but little benefit. When the tongue is much swollen, it should be promptly incised. Rapid relief is afforded by incisions; pain speedily subsides, and the tongue soon regains its normal size and freedom of movement. In all, save very severe and advanced cases of glossitis, and when extreme swelling of the tongue and alarming dyspnoea demand speedy relief through long and deep incisions, the author prefers to free cuts on the dorsum multiple scarifications of slight extent and depth along the free margins of the organ. Through this practice, drainage of effused fluid is established in many directions, and reduction of swelling is more rapidly effected just at the parts where it is most needed, viz., along the margins of the tongue, which are liable to become ulcerated in consequence of pressure on the teeth.

The author opposes the generally accepted view that the dyspnoea and attacks of threatening suffocation often met with in cases of acute glossitis are due to swelling of the posterior part of the tongue to such an extent as to cause this organ to touch the posterior wall of the pharynx, and to depress the larynx. Such result of abnormal increase in the length of the tongue is obviated by its partial protrusion in front between the teeth, and by the efforts of the patient to drag it forward. The tongue, according to the author, in consequence partly of its enlargement, partly of swelling of the sublingual soft parts, becomes elevated and applied to the nasal palate; at the same time the posterior portion of the swollen and elevated organ presses upwards and backwards upon the soft palate, which then acts as a curtain, and arrests the passage of air from the nasal fossæ into the pharynx. W. JOHNSON SMITH.

**ROGER ON THE CURE OF A CASE OF INTERNAL STRANGULATION BY INSUFFLATION OF AIR.**—The following case was communicated to the *Gazette des Hôpitaux*, by M. Roger, of Hede (*Paris Médical*, Feb. 15, 1877). Dr. Roger was called, on the night of Dec. 21, to a patient named F., living about three leagues from Hede, who was suffering from severe colicky pain. On arriving there about 9 the next morning, he found the patient suffering from severe pain in the left side between the last rib and the crest of the ilium. At this point was felt a lumpy tumour, which appeared to contain the arrested con-



tents of the intestine. F. related that, after a meal in which he had eaten a badly cooked dish, he had been seized with nausea, then colic and vomiting. He had not been to stool; the pulse was not frequent; the tongue white. M. Roger prescribed one ounce of castor-oil, and then, if the bowels were not moved, an enema in the evening. On the 23rd the patient was no better; there was no movement of the bowels. He was ordered two drops of croton-oil and two enemata of senna and sulphate of soda, at two hours' interval. In the evening there had been no motion; the pain was very severe, especially at times and on pressure. The tumour was still felt, and was harder than on the previous evening. The belly was distended, the pulse slow; the patient had thirst, red face, hiccough, and nausea. More enemata of senna and sulphate of soda were given, and extract of belladonna was applied to the painful part. On Dec. 24, the patient was in the same state. The eructations were less frequent; pulse slow—70. He had no appetite: much thirst; tongue very white. He was ordered a pill of calomel, jalap, and extract of belladonna every two hours. In the evening, his state being the same, insufflation of air by the anus was tried by means of a bellows and gum-elastic cannula, which was introduced as far as possible. The air was quietly blown in with rests from time to time, forty strokes of the bellows being given altogether. Slight pain was felt in the left side, but there was some relief. The purgative enemata and pills were continued the next day. No effect was produced, and insufflation was again tried. A great desire to go to stool followed, but nothing passed except wind. Insufflation was again tried, with redoubled energy. The next day a great improvement was manifest. There had been three motions, clear, somewhat abundant, smelling very strongly, and greenish in colour. The abdomen was still distended and there was a little pain. The belly was then electrified, and an enema of mercury ordered. An abundant motion ensued, with a little blood. The next day a glass of castor-oil was ordered, which procured three yellowish stools, the first two slightly bloody. From this time the patient gradually recovered.

**HENRIETTE ON THE SPONTANEOUS ELIMINATION OF VESICAL CALCULI BY THE HYPOGASTRIC REGION.**—The following interesting case is narrated in the *Journal de Médecine et de Chirurgie Pratiques*, March 1877, from the *Journal de Médecine de Bruxelles*. A girl, twelve years old, had, as a result of coxalgia, ankylosis of the hip-joints, which brought the knees so close together that they could not be separated. M. Henriette had ascertained the presence of calculi, but had not operated, as the ankylosis made operation difficult. He endeavoured to dilate the urethra and crush the stone. The first attempt was fruitless, and caused hæmorrhage; œdema of the vulva and incontinence of urine followed. Several attempts at lithotripsy were followed by the expulsion of calculi, whilst pain supervened, and the urine became ammoniacal. Ultimately an abscess formed below the umbilicus, which opened spontaneously, and gave exit to a large quantity of pus and urine. M. Henriette, being again called to the patient, found in a fistulous opening below the umbilicus a stone making its way out. The child was put to sleep, and the fistula being lengthened, the stone was removed by forceps. Having introduced his finger into the opening, M. Henriette ascertained that the bladder was filled with concretions.

He seized a large calculus, but was unable to extract it without enlarging the fistula. The rest were easily removed by the fingers, a curette, and the injection of tepid water. The next day the child was much relieved, and passed some urine by the urethra. The calculi weighed 45 grammes (695 grains). The child rapidly recovered, and having been in bed about a year, was walking about fifteen days after the extraction of the calculi. The fistula closed spontaneously.

W. DOUGLAS HEMMING.

**BRAND ON RECOVERY FROM A WOUND PERFORATING THE STOMACH.**—In the *Aerztliches Intelligenz-Blatt* for December 26, 1876, Dr. Brand of Füssen records the following case. He was sent for on the 22nd of July to see a boy, aged 5 years, who was said to have fallen down, and received a wound in the abdomen, from which something was hanging out. On arrival he found that the boy had fallen from a table to the floor with an earthen *pot de chambre*, and had cut himself with one of the shards of the broken vessel. His father drew the broken piece from the wound. This was soon after supper, and his stomach must have been pretty full at the time. On examination, a somewhat jagged wound was found on the left side of the abdomen in the lower part of the epigastric region, one and a quarter inches from the median line. The wound itself was almost vertical, and about one and three-quarter inches long. Some great omentum protruded from it. The boy vomited whilst the necessary questions were asked, and part of the stomach, about the size of an apple about two and three-quarters inches in diameter, was gradually forced out of the wound. In this there was a "solution of continuity" of three-fifths of an inch in length, which allowed food to escape from the stomach. During the vomiting, Dr. Brand kept up gentle pressure on the abdominal walls, then carefully cleansed the extruded part, ligatured a small spirting artery, united the stomach-wound—peritoneum to peritoneum—with a stitch, the end of which, with the ligatures, he brought out at the external wound. Two sutures, passing through the peritoneum, closed the external wound, after careful cleansing. Strips of plaster were also applied. The very patient little sufferer was much exhausted. His skin was cool; his pulse 108. He was put to bed, iced compresses applied to the wound, small doses of opium ordered, and ice to be sucked to relieve thirst. Next day his pulse was 92; temperature almost normal. He felt pretty comfortable. There was slight redness round the wound. In the next few days there was some abdominal tenderness, but not distention: and gradually, with very moderate febrile symptoms, a circumscribed abscess formed, from which, after removal of the stitches, on the sixth day, a considerable quantity of good thick pus escaped. At the same time gentle traction removed the suture and ligature belonging to the stomach-wound. All bad symptoms vanished from this date, though some pus was discharged until the 9th of August, when the external wound cicatrised. On August 21st the boy was brought again with a swelling in the old site. Pressure caused a small quantity of pus and a *carraway seed* to escape from the distended cicatrix. Three days afterwards, the wound again healed. After a year, the boy was seen again, in good health, not suffering the least from the accident, and it appeared that the stomach was firmly attached to the abdominal wall. The slight nature of the symptoms all through is very remarkable.

W. B. WOODMAN.

**LESPINE ON THE TREATMENT OF SERIOUS WOUNDS OF THE FINGERS BY DIACHYLON DRESSING.**—Lespine, in his *Thèse de Paris*, Jan. 22, 1877, speaks of the good results to be obtained by dressing with Chassaignac's diachylon on wounds occasioned by crushing of the fingers according to the practice of his chief, Desprès, of the Cochin Hospital. This practice consists in never amputating, in cleansing the wound, and extracting from it all foreign bodies and splinters, then in applying the diachylon dressing by the occlusive method. Out of 53 cases of crushing of the fingers, in which it has been used, there has been only one case of tetanus and not one of pyæmia.

#### RECENT PAPERS.

- A Rare Case of Inflammation of the Cellular Tissue of the Neck. By Dr. M. Rudnik. (*Allgemeine Wiener Medizin. Zeitung*, May 8, 15, and 29.)  
 Boracic Acid as a Dressing. By Dr. B. Credé. (*Berliner Klinische Wochenschrift*, May 28.)  
 Aneurism of the Abdominal Aorta. By Dr. E. Stiller. (*Wiener Medizin. Wochenschrift*, May 5, 12, 19.)  
 Seven Cases of Penetrating Gun-Shot Wound of the Chest: Recovery. By Dr. M. Nedopil. (*Wiener Medizin. Wochenschrift*, May 5, 12, 19.)  
 Operations on the Naso-Pharyngeal Space. By Dr. R. Störk. (*Wiener Medizin. Wochenschrift*, May 19 and 26.)  
 The Radical Cure of Hernia. By Dr. V. Czerny. (*Wiener Medizin. Wochenschrift*, May 26.)  
 A Rare Case of Narrowing of the Larynx. By Dr. Böcker. (*Deutsche Medizin. Wochenschrift*, April 28 and May 5.)  
 Ulceration and Stricture of the Rectum: with a report of two cases in which Colotomy was performed. By Dr. G. E. Fenwick. (*Canada Medical and Surgical Journal*, May.)  
 Lecture on the Behaviour of Blood-Clot under aseptic conditions. By Dr. D. Foulis. (*Edinburgh Medical Journal*, May.)  
 Litholysis. By Dr. G. C. Duncan. (*Edinburgh Medical Journal*, May.)  
 On Contraction of the Jaws. By M. Richet. (*L'Union Médicale*, May 15.)  
 Surgical Indications in Cases of Acute Gangrene or Acute Gangrenous Septicæmia. By Dr. Terrillon. (*Bulletin Général de Thérapeutique*, May 15 and 30.)

#### MATERIA MEDICA AND THERAPEUTICS.

**HAYDEN ON ANHIDROTICS.**—In a paper read before the Medical Society of the College of Physicians in Dublin, and published in the *Dublin Medical Journal* for April 1877, Dr. Hayden speaks of the use of Anhidrotics in cases where perspiration demands, by its excess, and by its unfavourable influence on the issue of the principal disease, direct or even exclusive treatment. In the advanced stages of pulmonary phthisis—softening and excavation—the profuse perspiration usually occurs during sleep and towards morning, or after a paroxysm of coughing. In the former case it is most effectually controlled by five grains of Dover's powder, given once or twice in the course of the night; and where perspiration is due to excessive coughing, the inhalation of ten to twenty minims of chloroform, or a full dose (ten minims each) of chlorodyne and liquor of morphia, given during the fit of coughing, is the best remedy.

He has occasionally given oxide of zinc in combination with Dover's powder (two-and-a-half grains of each); but the latter given alone is more efficacious, and is likewise useful as a corrective of, or a prophylactic against, diarrhoea.

Tepid sponging of the face, neck, chest, and hands, with toilet vinegar and water in equal proportions at bed-time, is likewise useful to arrest perspiration, and is very agreeable to the patient. The drinks

should be cold or tepid; ice may be occasionally sucked, and the night-dress should be put on as warm as it can be borne.

In a few cases Dr. Hayden has given half a grain of extract of belladonna twice in the course of the night, or a full dose (thirty minims) of the tincture at bed-time. It has in some degree checked the night-sweats of phthisis, but failed to arrest them; and, as an anhidrotic in this disease, it is inferior to Dover's powder.

In a case of profuse and obstinate sweating in the convalescence of protracted typhoid, a young man aged twenty-two, tincture of belladonna and dilute phosphoric acid were given separately and conjointly in thirty minim doses; sulphuric and hydrochloric acid; quinine in ten-grain doses; Dover's powder; oxide and sulphate of zinc, without effect. At last Dr. Hayden induced the patient, much against his will, to get out of bed and remain up for several hours daily. By this means perspiration was promptly and entirely arrested, and a change to the country completed recovery. The bowels were, during convalescence, rather constipated.

For the sweating of acute miliary tuberculosis, he thinks that opium is the best remedy; but any medicine used must be occasionally suspended, else it will lose its effect.

For the sweating of the hands, feet, and axillæ, which occurs to many persons otherwise in good health, Dr. Ringer recommends the liniment of belladonna rubbed occasionally over the parts affected. Dr. Hayden has found good results from frequent washing and sponging with the "liquor" obtained from the tan-yards (a strong cold infusion of oak-bark).

Topical and cold astringents are of only temporary efficacy, and induce active reaction of the sweat-glands. Inhibition of blood-supply to these glands through the vaso-motor nerve-system, as exemplified in Bernard's experiments of galvanising the sympathetic nerve of the submaxillary gland, constitutes the scientific plan of treating general hidrosis. The medicinal agents by which this may be accomplished are anhidrotics in the true sense of the word. It is a question of much interest whether, following the clue afforded by Bernard, physicians may not find in electricity an agent still more potent than medicine in the treatment of hidrosis.

In the discussion which followed the reading of the paper, Dr. Finny said he had formerly diluted sulphuric acid and liquor ferri perchloridi. He had also given three grains of Dover's powder once each night, and had found it occasionally to answer. He had not employed belladonna, but was in the habit of using the sulphate of atropia, mixing half a grain of it with sugar of milk, and dividing the mass into forty pills. One of these pills moderated the sweating, and two—one at night and one in the morning—entirely stopped it. He had notes of sixteen cases in which this remedy had answered. Dr. Finny attested to the value of atropia, when given internally, in the treatment of local sweating. He had found atropia more efficacious in the solid than the liquid form. It had not, however, in his experience checked the sweating in enteric fever.

Dr. MacSwiney remarked that various means of trying to arrest the perspiration of phthisis had been in fashion from time to time. At the commencement of his career he was taught to use diluted mineral acids with bitter infusions. Then acetate of lead was used, apparently with advantage, and enjoyed a high repute. Latterly, belladonna appeared to be



almost universally relied on, and, according to his experience, it arrested the perspiration. In a recent case of very distressing hidrosis, half a grain of belladonna materially influenced the amount of the perspiration. Sponging the body with warm diluted vinegar he had seen to be followed by a very considerable amelioration of the symptoms. But he thought it very questionable whether it was desirable, in every case, to arrest perspiration in phthisis. In the large majority of cases, diarrhoea and perspiration alternated; if the one was arrested, the other came on. He would go further, and say that he did not think it was desirable to use decided and continuous means of totally arresting perspiration in the third stage of phthisis.

Dr. Henry Kennedy said that the extent to which cod-liver oil—if the patient could take it—lessened perspiration was astonishing. It had always appeared to him that evening drinks should be checked. The thirst of the patient was often very great; but, by a deprivation of fluids, he had been able to lessen perspiration in phthisis. Again, patients found cotton dresses much pleasanter and better next the skin than linen. Tepid sponging was also very valuable. He agreed with Dr. MacSwiney that perspiration should not be altogether checked, even if they had the power of doing so, because that course was very apt to be followed by diarrhoea.

WHITE AND OTHERS ON THE ADMINISTRATION OF SALICYLIC ACID.—Mr. J. W. White (*Pharmac. Journal*, Dec. 16, and *Edin. Med. Journal*, March) believes that, except in small doses, salicylic acid is best prescribed in suspension with tragacanth, or in the form of pill, especially as there is little doubt that, in soluble combinations with alkalis and alkaline salts, the properties of the free acid are more or less modified. If salicylic acid be beaten up with 1-10th its weight of borax, and the same proportion of glycerine and tragacanth, an excellent pill-mass is procured, of which six grains represent five of acid, and do not form an inconveniently large pill.

Mr. J. C. Thresh, of Buxton, undertook some experiments to ascertain whether or not the increased solubility of salicylic acid in solutions of borax and other salts was due to some chemical decomposition between the acid and the salts employed, and if the solutions thus formed possessed the antiseptic and antifermentative properties of the free acid. The results he obtained, although not completely worked out, are of interest, and were as follows (*Pharm. Journ.*, Nov. 25, and *Edin. Med. Journ.*, March).

If borax and salicylic acid be mixed in a mortar, the result is a damp, almost pasty mass. The taste at first is simply that of the acid and borax, but in a very short time it begins to acquire a bitter taste, and after a few hours it is intensely bitter. If a little of the freshly prepared mixture be carefully fused, the resulting mass at once becomes exceedingly bitter; and if the proportions employed have been one of borax to two of acid, the mass is soluble in about twice its weight of water. A dilute solution of five grains each of acid and borax, in one ounce of water, is devoid of bitterness, and remains so even after keeping a length of time, but stronger solutions soon become bitter.

Phosphate of soda has not a solvent effect equal to that of either borax or ammonium citrate. One part of salicylic acid requires—

2 parts of phosphate to form a solution with 50 parts water.				
2'25	"	"	"	25
2'5	"	"	"	12'5

Solutions one and two are colourless, but the strongest solution has a slight pink tint. Diluted with water, ferric chloride added in excess gives a purple red solution, which also indicates the existence of a salicylic salt, since whilst free salicylic acid strikes a purple colour with ferric chloride, its salts give a deep red coloration with this reagent. No phosphoric acid, however, is liberated, for a single drop of the dilute acid, added to the solution, causes a precipitation of salicylic acid.

Ammonium citrate, whilst increasing the solubility of salicylic acid in water to a much greater extent than sodium citrate, yet possesses no advantages over *potassium citrate*, and as this latter was more convenient, Mr. Thresh employed it in preference.

Table of solubility of Salicylic Acid in Potassium Citrate solution.

Sal. Acid	1	Citrate	75	Water	100
"	1	"	1'0	"	50
"	1	"	1'15	"	25
"	1	"	1'25	"	20
"	1	"	1'4	"	12'5
"	1	"	1'5	"	7'5

A stronger solution than the last solidifies upon cooling. It gives reactions indicative of free and combined salicylic acid, and of combined citric acid, but not of free citric acid. An alcoholic solution of potassium salicylate, mixed with a similar solution of citric acid, gives a precipitate of potassium citrate, which readily dissolves on the addition of a little water, and the solution thus formed is miscible with water, without precipitation of salicylic acid. One drachm of salicylic acid, three and a half drachms of rectified spirit, one drachm of potassium citrate, and three and a half drachms of water, form a solution miscible with water in all proportions, and two drachms of which contain fifteen grains of the acid. In this solution diluted acetic acid gives no precipitate, citric acid causes a precipitate to form slowly, mineral acids throw down the salicylic acid instantly. Ferric chloride colours the fluid purple red.

To ascertain the antiseptic value of the solutions formed by aid of these salts, Mr. Thresh added them to a number of infusions (malt, quassia, calumba, etc.), to grape-juice, and flour-paste; and, after a lapse of two months, with the exception of flour-paste and grape-juice, the solutions were equally as fresh as those prepared with free salicylic acid.

To test their antifermentative powers he prepared over thirty mixtures of flour (one ounce) and water (half ounce), with twenty grains of German yeast in each, and added thereto various proportions of free salicylic acid, of potassium salicylate acidified with acetic acid, and of salicylic acid dissolved by aid of borax, phosphate of soda, and citrate of potash. The smallest quantity of free salicylic acid which uniformly prevented the rising of the dough was one grain. The acidified salicylate of potash had not the slightest effect unless added in large proportions. One grain of acid in borax solution was equally as powerful as the free acid. A similar quantity dissolved by aid of ammonium citrate or sodium phosphate only retarded for a variable time the fermentation, but in both cases one and a quarter grains were found effectually to arrest it.

It is, therefore, evident that some reaction, as yet undetermined, does take place between the salicylic acid and the salts employed as its solvents, yet that in whatever state the salicylic acid exists in the above named solutions, it is capable of exhibiting in a high

degree the properties which have conferred upon it notoriety.

**BONAMY ON THE TREATMENT OF OBSTINATE DIARRHŒA BY OXIDE OF ZINC.**—Dr. Bonamy publishes (*Bulletin Général de Thérapeutique*, 30th March, 1877) a number of observations in respect of this treatment. "Calling to mind", he says, "the results obtained in the treatment of diarrhœa by Professor Gubler by the aid of oxide of zinc, I resolved to try it in obstinate diarrhœa". Dr. Bonamy employed the method indicated by M. Gubler, that is to say:  $3\frac{1}{2}$  grammes ( $52\frac{1}{2}$  grains) of oxide of zinc mixed with half a *gramme* ( $7\frac{1}{2}$  grains) of bicarbonate of soda, and divided into three or four doses, to be taken every three hours. M. Bonamy has not observed any vomiting. He sums up the advantages of the treatment thus:—1st. *Superiority of action*; since all the cases of diarrhœa in which oxide of zinc was employed with success had resisted other means of treatment, and since the diarrhœa reappeared as soon as the oxide of zinc was replaced by another agent. 2nd. *Rapidity of action*; diarrhœa dating for several months was favourably modified after the administration of the first dose.

**MARTIN ON TIMBO.**—M. Stanislas Martin writes (*Bulletin Général de Thérapeutique*, March 30), that Timbo (*Paullinia pinnata*, Linnaeus) is a tree found in Brazil, Mexico, the Antilles, and Guiana. The bark of the root has an agreeable aromatic odour, somewhat analogous to that of musk. In Brazil it is only employed externally. Cataplasms are made with boiling water, which are placed on the side in affections of the liver. Often there are eruptions; then its employment is disused. M. Martin has obtained from the bark of the root: 1, an alkaloid, to which he gives the name of Timbonine; 2, starch; 3, a resin; 4, an essential oil; 5, chlorophyll; 6, tannin; 7, an organic acid; 8, traces of glucose with sulphide. By treating finely powdered timbo with sulphide of carbon, the extraction of the alkaloid and other principles is facilitated. Timbonine is a white substance, in needle-shaped crystals.

**VON MUELLER ON PITURY.**—Baron von Mueller writes to the *Australian Medical Journal* on the origin of the Pitury, a stimulant said to be of marvellous power, and known to be in use by the aborigines of Central Australia. After years of efforts to get a specimen of the plant, he had obtained leaves, but neither flowers nor fruits. He can almost with certainty, after due microscopic examination, pronounce the leaves of the pitury as derived from his *Duboisia Hopwoodii*, described in 1861 (*Fragm. Phytogr. Austr.* ii, 138). This bush extends from the Darling River and Barcoo to West Australia, through desert scrubs, but is of exceedingly sparse occurrence anywhere. In fixing the origin of the pitury, a wide field for further inquiry is opened up, inasmuch as a second species of *Duboisia* (*D. myoporoides*, R. Br.) extends in forest-land from near Sydney to near Cape York, and is traced also to New Caledonia, and lately by him also to New Guinea. In all probability this *D. myoporoides* shares the properties of *D. Hopwoodii*, as he finds that both have the same burning acrid taste. Baron Mueller adds: "Though the first known species is so near to us, we never suspected any such extraordinary properties in it as are now established for the later discovered species. Moreover, the numerous species of the allied genus *Anthocercis*, extending over the greater part of the

Australian continent and to Tasmania, should now also be tested, and further the many likewise cognate *Schwenkeas* of South America, should be drawn into the same cycle of research, nothing whatever of the properties of any of these plants being known. The natives of Central Australia chew the leaves of *Duboisia Hopwoodii*, just as the Peruvians and Chilians masticate the leaves of the coca (*Erythroxylon Coca*), to invigorate themselves during their long foot-journeys through the deserts. I am not certain whether the aborigines of all districts in which the pitury grows are really aware of its stimulating power. Those living near the Barcoo travel many days' journeys to obtain this, to them, precious foliage, which is carried always about by them broken into small fragments and tied up in little bags. It is not improbable that a new and perhaps important medicinal plant is thus gained. The blacks use the *Duboisia* to excite their courage in warfare; a large dose infuriates them."

**SCHENKL ON TANNIN-COLLYRIA.**—Dr. Schenkl (*Prager Med. Wochenschrift* and *Schmidt's Jahrbücher*) employs tannin by instillation in various conjunctival affections, using a solution of a strength of one in sixty. This solution should be dropped into the eye three or four times a day. It cuts short the second stage of contagious conjunctivitis, and has also proved of great benefit in severe cases of pannus. Its effects were particularly favourable in all forms of scrofulous inflammation (phlyctenular keratitis, herpes of the conjunctiva and cornea); and he even alleges that photophobia and pain disappeared after the third or fourth application.

**MOURRUT ON BROMO-HYDRATE OF CONIA.**—M. Mourrut (*Repertoire de Pharmacie, and New Orleans Med. and Surg. Jour.*, Jan. 1877) states that this salt has been successfully employed in pertussis, in doses of one-twelfth of a grain, if necessary, every hour, for a child three years of age; or one-thirtieth of a grain for a child of one year, and one-sixth of a grain for adults. Hypodermically, in quantities of one-twelfth of a grain, good results have been obtained in sciatica. The pure salt occurs in colourless prismatic needles, soluble in water and alcohol, less so in ether and chloroform; odourless, nearly tasteless and deliquescent. Exposed to the light, it turns red, but does not decompose; therefore, it should be kept dark.

**DAVIS ON THE THERAPEUTIC USE OF CENOTHERA BIENNIS.**—Dr. N. S. Davis of Chicago (*American Practitioner*, January 1877, and *Detroit Med. Journal*, May) highly recommends the *Cenothera Biennis* as a mild, but efficient, sedative to nervous sensibility, acting more especially on the pneumogastric nerve. In his experience, he has found it most useful in those cases of asthma associated with chronic indigestion, or gastric irritability, where anodynes or expectorants cannot be borne on account of the other unpleasant effects which they produce. He employs most frequently the fluid extract, in doses of twenty to twenty-five drops every four hours.

**CHEVALLIER ON MILK-BEER.**—Professor Chevallier gives in the *Journal d'Hygiène*, for January 1877, a description of a new beer which he has examined and analysed, and which he believes to be destined to take an important place in alimentary hygiene. The manufacture of this beer is conducted on the same principles as those on which beer in



general is brewed, except that milk is substituted for water. This beer is of a yellow colour, and of a higher density than ordinary beer. Ordinary beer contains 950 grammes to the litre; milk-beer, 990 grammes. Milk-beer possesses an agreeable flavour in which the hop is decidedly perceptible, and unites its aromatic principles with the nutritive and restorative qualities of milk and malt. If, then, the incontestable utility of beer in general be taken into consideration, it is easy to see the great hygienic value of a beer in which water is replaced by milk, which gives an increase of albuminous matters, and a large quantity of salts identical with those of the serum of the blood; and how much this natural association of all the constituted principles of milk in malt and hops enhances the nutritive properties of the beer.

CASENA ON THE THERAPEUTIC ACTION OF THE SPRINGS OF SALUT (BAGNERÈS DE BIGORRE).—Dr. Casena has studied the Salut spring at Bagnères de Bigorre, and communicates the results in his *Thèse de Paris*, January 25, 1877. The waters are alkaline sulphate, slightly arsenical, and become temporarily sulphurous at the end of hot summer weather. The waters of the Salut spring possess sedative properties which produce admirable results in cases where the excitability of the nervous system is heightened, and particularly in dyspepsia and nervous headache, and in general neuropathic affections accompanied by nervous troubles. The Salut waters are contraindicated, or should be taken with great caution, in cases of acute articular rheumatism, in pulmonary affections, etc. The Salut waters are excellently supplemented in hydrotherapy by the various ferruginous, sulphurous, etc., springs of Bagnères, and by the careful observation of an appropriate hygienic treatment.

SQUIRE ON THE ADMINISTRATION OF NITRATE OF BISMUTH.—The value of bismuth as a local application in many skin-diseases is well known, but its use has always been crippled by the difficulty, indeed impossibility, of obtaining a suitable solution. Mr. Squire states (*Pharm. Journal*, Nov. 11, and *Dublin Journal of Medical Science*, March 1877) that (neutral) nitrate of bismuth is freely soluble in glycerine without decomposition, and that even on free dilution of the glycerine with cold water, the precipitation of basic salt of bismuth is greatly delayed, and apparently prevented in great part. This glycerole is a bland and mild astringent, and offers facilities as an application to the throat, larynx, vagina, uterus, and urethra, as well as to the skin. It might also be used internally.

CHARLES ON NITRATE OF SILVER IN PRURITUS OF THE VULVA.—Dr. Charles (*Annales de Gynécologie, and American Practitioner*, April 1877) speaks most highly of the application of the solid nitrate of silver in the treatment of vulval pruritus. The seat of the itching is oftenest near the clitoris, or in the nymphæ, sometimes at the margin of the anus. It is necessary to cauterize freely, passing the crayon two or three times over the affected surfaces, and even somewhat beyond them. Dr. Charles states that he has found, without a single exception, great relief from the first cauterisation, often a complete cure. Sometimes it is necessary to recur to the cauterisation a second or third time after some days.

REYNOLDS ON PILLS OF SULPHATE OF QUININE.—In a communication to the *American Journal of*

*Pharmacy*, Mr. H. P. Reynolds speaks very highly of the following formula for the preparation of quinine pills. He says that the quantities directed are correctly proportioned, and should not be altered. Sulphate of quinine, gr. 600; tartaric acid, gr. 100; glycerine m. 75. Rub the quinine and acid together in a mortar to a fine powder till no appearance of crystals remains; add the glycerine—just 75 minims, no more nor less; and continue the trituration till the powder becomes adherent, when it should be beaten into proper form for handling, and divided into the requisite number of pills. The mass is firm, solid, rolls well, does not set for some hours; and the pills will be found quite small for their weight, very white if rolled in starch powder; and, however dry or old they may become, they remain perfectly and entirely soluble.

PARES ON VALERIANATE OF CAFFEINE FOR WHOOPING COUGH.—M. Pares (*Gazette Obstétricale* March 5th, and *American Practitioner*, April 1877) advises teaspoonsful doses of the syrup of the valerianate of caffeine, as producing great benefit in cases of whooping cough. The valerianate is also very useful in nervous vomiting. It may be given in pills, each containing a grain and a half of the salt mixed with a sufficient quantity of honey.

CHLORAL-HYDRATE A SOLVENT FOR FATS.—A writer in the *Medical and Surgical Reporter* for Jan. 5 (quoted in *Boston Medical and Surgical Journal*, March 15) says that chloral hydrate is a solvent for fats, so much so that solid fat becomes liquefied by contact. "Hence it is not advisable to prescribe, for instance, chloral with lard, simple ointment, or even with simple cerate, in a very large proportion; with oleum theobromæ it forms an unctuous mass, but it is almost an impossibility to make a suppository from this composition." Equal parts of spermaceti and oleum theobromæ will make a very convenient suppository for ten or twelve grains of chloral. Vaseline, three parts, and paraffine, two parts, make a very good base, but it does not melt as nicely into an unctuous mass as that formed by spermaceti and theobroma oil.

MEDICATED CASTOR-OIL CAPSULES.—M. Limousin showed at a recent meeting of the Paris Société de Thérapeutique some medicated capsules containing from three to four grammes of castor-oil, and which keep perfectly in their envelope made of unfermented bread; forming a convenient method for administering this oil. Cod-liver-oil, being more fluid, cannot be confined in those medicated capsules.

#### RECENT PAPERS.

- Inhalation of Oxygen in Diseases of the Lungs and Heart. By Dr. W. Brügelmann. (*Allgemeine Medizin. Central Zeitung*, May 23 and 26.)  
Coto-bark and its Active Constituents. By Dr. Burkart. (*Berliner Klinische Wochenschrift*, May 14.)  
On Exanthemata from Drugs: Especially the Quinine-Exanthem. By Dr. H. Köbner. (*Berliner Klinische Wochenschrift*, May 28.)  
Hospital Fever, Cotton Wool Dressing, Lister's Dressing, Lying-in Hospitals. By Dr. Bouchardat. (*Bulletin Général de Thérapeutique*, May 30.)  
Note on the Employment of Double Cyanide of Potassium and Zinc in Therapeutics. By Dr. E. Selu and M. G. Sugan. (*Ibid.*)  
On Cold Baths. By M. Pugliese. (*Lyon Médical*, June 3, 1877.)  
On the Non-Poisonous Properties of Fuchsine. By Dr. Bouchut. (*Gazette des Hôpitaux*, May 26.)  
Syphilis and Marriage. By M. Alfred Fournier. (*Le Mouvement Médical*, Nos. 18 and 21.)  
On Pemphigus. By Dr. Lailler. (*La France Médicale*, May 19 and 23.)

## OBSTETRICS AND GYNÆCOLOGY.

STILLING ON THE MANAGEMENT OF THE PEDICLE AFTER OVARIOTOMY.—In a series of papers published in the *Deutsche Medicinische Wochenschrift*, Nos. 10, 11, 12, and 13, 1877, Dr. Stilling, of Cassel, suggests an explanation of the fact, first pointed out by Rogers of America, that, after application of a ligature to the pedicle of a cyst in ovariectomy, the ligatured portion does not mortify, and that the free end of the divided pedicle, when placed in the pelvic cavity, causes no irritation of adjacent viscera, and excites no constitutional reaction. Waldeyer, Spiegelberg, and others, have endeavoured to throw some light on this matter through experimentation on living animals, and examination of the bodies of these after death. The results of such investigations, however, have varied much, and have been far from satisfactory. The views and statements given in Dr. Stilling's paper are regarded by the author as but a fragmentary and preliminary portion of the work necessary for a full explanation of the natural processes that are carried on in the ovarian pedicle after deligation. It is stated here that a ligature, when applied with ordinary force to the pedicle, forms a deep annular groove, in which it is imbedded and almost wholly concealed. The small isthmus of peduncular structure enclosed within the ligature is bounded on its proximal and distal side by a swollen and rounded mass of free pedicle. These two rounded portions are closely applied at their free surfaces so as to conceal the ligature. In the course of the first two or three days after the operation, adhesions are formed over the ligature between the applied distal and proximal ends of the pedicle at the seat of deligation; and in these adhesions, which subsequently increase in extent and become firmer, vessels are formed, and a circulation of blood and lymph established. In consequence chiefly of this circulation, the free extremity of the pedicle preserves its vitality, and is maintained in organic connection with that portion on the proximal side of the ligature. The author holds also that, in the small portion of pedicle that is constricted by the ligature, circulation of blood and lymph is re-established in the course of the first week after the ovariectomy. The thicker and firmer the portion of deligated pedicle, the less readily, he states, will it yield to the constriction of the ligature. At first, circulation through this included portion is completely arrested, but in a very short time the constricted tissue softens, and often, especially when it is composed of catgut, the ligature also softens and gives way. Then, by the force of the general circulation, blood is driven through this softened tissue into the most distal portion of the pedicle. The currents at first are small, but the supply of blood in this direction, together with that through the adhesions without the ligature, is sufficient to prevent death of the extremity of the pedicle.

Dr. Stilling argues that the extraperitoneal method of ovariectomy, *viz.*, that in which the pedicle is compressed by a clamp applied without the wound in the abdominal wall, ought to be regarded as obsolete, and that the intraperitoneal method, in which the deligated pedicle is allowed to fall back into the pelvic cavity, is to be preferred, as being free from all the dangers and disadvantages to which the former proceeding is liable. With the extraperitoneal method much damage, and even

tetanus, may be produced when the pedicle is short, in consequence of traction on and twisting of the uterus. Constant tension of the pedicle must interfere, it is held, with the natural process by which the constricted and gangrenous portion is separated from the living portion between the clamp and the uterus. The reproduction of this portion of the pedicle, and its retraction into the pelvic cavity, may take place prematurely and result in internal hæmorrhage. The extraperitoneal method is not free from danger even in cases where the pedicle is long. During the early stages of the after-treatment, and so long as the clamp is retained, there is a constant risk of hæmorrhage, and the surgeon cannot be free from anxiety before the removal of the clamp, and complete healing of the wound in the abdominal wall.

The following precautions, Dr. Stilling states, ought to be observed in order to secure for the intraperitoneal method of ovariectomy the full amount of success that may be expected from it. All stages of the operation must be performed with strict attention to the many details of Lister's antiseptic method. When it has been found impossible to prevent the effusion of cyst-contents or of blood into the abdomen, this cavity must be carefully cleansed with sponges disinfected by a solution of carbolic acid. The most suitable material to be used for deligation of the pedicle is thick carbolised catgut. Dr. Stilling points out the importance of care in the deligation of the pedicle, and insists on the propriety of applying several ligatures, a thin cylindrical mass of peduncular structure being enclosed in each. Permanent occlusion of every vessel is thus insured, and recurrent and secondary hæmorrhage prevented. It is laid down as a rule that each ligature should not include more than about six-tenths of an inch of the thickness of the pedicle. In order to insure a safe and effectual deligation of a tolerably thick ovarian pedicle, it is necessary, Dr. Stilling asserts, to apply at least six catgut ligatures. Care should be taken to guard against the loosening of the knot that is likely to take place when catgut is used. It is recommended that three knots be tied in each ligature, and that in the tying of each knot the ends of the ligature be stretched by prolonged and forcible traction. It is necessary to apply each ligature with such firmness, that the swollen portions of peduncular structure immediately above and below the groove in which the catgut is embedded may fall together in close contact. In transfixing the pedicle, care must be taken to avoid a puncture of any large vessel. The pulsation of the large arterial trunks can be readily felt by the finger. If a vein be punctured, the consequent bleeding will not cease until after the separation of the ovarian cyst. The division of the pedicle should be made as close as possible to the seat of deligation, and care must be taken to avoid retaining any portion of the cyst-wall. The free extremity of the peduncular stump should be carefully washed with a solution of carbolic acid, before it is returned into the peritoneal cavity.

Dr. Stilling recommends carbolised catgut as the best material for the sutures used in closing the abdominal wound. By the use of this material the desired object may be surely attained, and the surgeon, after the incision has been closed, and antiseptic dressing applied, will find but little, if any, necessity to trouble himself about the wound. Each suture, which should consist of thick catgut, is furnished, in Dr. Stilling's practice, with a needle at each end, so that the abdominal wall may on both sides be punctured from within outwards. Each



puncture is made about four-fifths of an inch from the edge of the incision in the abdominal walls, all the coats of which, peritoneum included, are traversed by the needle and suture. The knot is tied with some force, in order that the catgut may be deeply imbedded in the soft structures which it constricts. The sutures should be applied as closely as possible, so that the raw edges along the whole length of the abdominal canal may be brought into intimate contact. In favourable cases of ovariectomy, performed in accordance with the above-mentioned directions, and under strict antiseptic conditions, the abdominal wound will be found completely healed at the end of fifteen days or three weeks, no renewal of the dressing applied immediately after the operation being required during this interval.

W. JOHNSON SMITH.

MICHAUX ON A CASE OF OVARIOTOMY, WITH EXCEPTIONAL ADHESIONS.—On the 9th December last, M. Michaux, of Louvain, performed ovariectomy (*Paris Médical*, Feb. 15, 1877). The operation was nearly completed, when all at once an intimate and extended adhesion was discovered between the cyst and the stomach, which had not been foreseen; the digestion had always been regular, and at most there had been some vomiting. The cyst adhered very intimately to the greater curvature of the stomach; the walls of the cyst and those of the viscus seemed, at this point, to be mingled and formed into one fold. What was to be done? Two courses were open—to raise and detach as much of the cyst as possible, leaving only the external layer attached to the viscus, or to excise the portion of the cyst, leaving in the belly all the adherent part. M. Michaux preferred the latter, as easier in execution and sure in its results; accordingly he cut away the whole of the cyst which was external, and the remainder, which he could not separate, and which was about the size of two palms of the hand, he united to the lips of the wound by a large number of interrupted metallic sutures. A month afterwards, the patient was well.

W. DOUGLAS HEMMING.

SUTTON ON A SUBPERITONEAL FIBROID TUMOUR OF THE UTERUS REMOVED THROUGH AN INCISION IN THE POSTERIOR WALL OF THE VAGINA.—Dr. R. Stansbury Sutton records (*Chicago Medical Journal and Examiner*, Dec. 1876) a case of this kind. He alludes to the four cases in which ovarian tumours have been removed by this method—those of Prof. T. G. Thomas, Dr. R. Davis, Dr. S. T. Gilmore, and Robert Battey, all successful.

Dr. Sutton's patient was a coloured woman, fifty years of age, with a large solid ovoid tumour, filling the right half of the pelvic cavity, and pushing the uterus firmly to the left lateral wall. The operation was performed June 25. The patient being placed on her left side, the bladder was emptied with a catheter, and ether administered. The posterior wall of the vagina was seized, about midway between the rectum and cervix uteri, with a tenaculum, and cut through with one stroke of the scissors; with a probe-pointed bistoury and the aid of a tenaculum, this incision was extended as far as possible towards the rectum and towards the cervix. All bleeding being arrested by sponging with cold water, the peritoneum was picked up with Sims' small tenaculum and cut through with the scissors. This incision was now made of the same length as the former, with the probe-pointed bistoury. The finger was now readily brought into contact with the tumour. An effort

made to enucleate the growth in its position failed. The hand, first dipped in carbolic water, was carried into the cavity of the pelvis, the tumour grasped, and all its adhesions forcibly broken up. It was found to be attached by a fleshy pedicle to the posterior wall of the uterus. When the hand was withdrawn, the small intestines followed into the vagina. These were carefully pushed back with the hand, which was again carried up to the growth. A pair of strong vulsellum-forceps were carried closed along the front of the wrist and palm of the hand and carefully expanded over the tumour, which was now seized and drawn into the vagina, the index finger of the left hand working back over the growth as much as possible the lips of the vaginal wound. The speculum was again introduced, and the exposed capsule incised as far as it could be reached; and, with the aid of a pair of dressing forceps, a tenaculum-handle, and the finger-nail, it was stripped back beyond the equator of the growth on all sides. The tumour now occupied the vagina, and, a second pair of forceps being fastened upon its stripped surface, the first pair were carefully removed. A pair of guarded hooks were also fastened into it; and the tumour was pulled through the external outlet of the pelvis, the perinæum being supported, and the capsule stripped back with the thumb-nail, as the tumour came out. Two vessels in the pedicle required ligation. The pedicle, with some folds of small intestine in the vagina, were now pushed back into the abdominal cavity. No stitches were applied in the vaginal wound. The patient had been forty minutes under the anæsthetic, of which eight fluid-ounces had been consumed. The patient died June 29.

A careful investigation revealed a wound of the small intestine, which had been made with a prong of the vulsellum during the operation. This wound was only discovered by making pressure along the intestines and finding that gas escaped at what was a mere pin-hole, leading down from which was the line of a little rent which was so completely glued as to require some effort to separate the edges. The danger was appreciated, and careful attention given to avoid it. Doubtless the escape of gas was one cause of the peritonitis which carried her off.

DUNCAN ON INVERSION OF THE UTERUS.—In the *Edinburgh Medical Journal*, March 1877, Dr. Matthews Duncan relates five cases of complete inversion of the uterus. Two were cases of acute *post partum* inversion, one of which died. The remaining three were cases of chronic *post partum* inversion. Of these, two were cured, one by forcible taxis, the other by taxis combined with operation. The third died after amputation of the uterus.

Dr. Matthews Duncan remarks that the condition of the cervix is of no importance in the inversion of the uterus, and this he considers proved by the fact that at the necropsy of Case II, which was an acute *post partum* inversion, he could readily protrude and intrude the inverted uterus through the cervix uteri. Dr. Duncan, therefore, in his operation for Case IV, or chronic inversion, incised the uterus itself, but failed at the same sitting to reduce it. The replacement was only coincident in extent with the incisions. On examination, "many days afterwards, the organ was found all right". Dr. Duncan next truly remarks that extirpation, as a treatment of inverted uterus, is an evasion of the difficulty.

RUNGE ON THE INJECTION OF HOT WATER INTO THE UTERUS IN POST PARTUM HÆMORRHAGE.

—In the *Berliner Klinische Wochenschrift*, March 1877, Dr. Max Runge relates several cases in which he arrested *post partum* hæmorrhage by means of injections of hot water, at a temperature varying from 38° to 41° Reaumur (117.5 and 124.25 Fahr.), into the uterus. The injection of hot water arrested the bleeding in one case after *ergot*, friction of the uterus, and iced water douche had failed. In another case the injection of hot water arrested the hæmorrhage when neither iced water nor *ergot* had been used. The injection of water at a temperature of 40° Reaumur is not always without such severe pain that the water has to be lowered to a temperature of 38° Reaumur. The complete contraction of the uterus is not arrived at after the injection of hot water. [Dr. Runge mentions the names of Landau, Windelband, and Jakoch in connection with hot water injections, but is apparently unaware of the fact that Dr. Emmet, of New York, injected hot water into the uterus to restrain hæmorrhage before any of these gentlemen. —*Rep.*]

SCHMITT ON THE VOMITING OF PREGNANCY. — In Betz's *Memorabilien*, Band xxii, Heft 3, there is recorded a case, by Dr. A. Schmitt, of vomiting during the last days of pregnancy. The patient was a healthy woman, aged 23, in her second pregnancy. The first pregnancy had been normal. Three days before labour, sudden pains in the stomach set in, which gradually increased in violence, and which were succeeded by vomiting. It was thought at first to depend on indigestion. There was intense thirst, and the patient swallowed large quantities of water, which were quickly vomited. Chloroform, arrack, broth, alkalis, morphia, bismuth, nitrate of silver, opium, and chloral-hydrate were tried in vain. Ice, to suck, alone gave relief. The vomiting ceased at the onset of labour, and the patient was delivered of a healthy female child. She recovered her strength rapidly.

FANCOURT BARNES, M.B.

OLIOLI ON A CASE OF IMPERFORATE HYMEN : OPERATION. — This case is related in the *Annali Universali di Medicina* for April, by Dr. Antonio Olioli of Maggiora, in the province of Novara. The patient was a peasant girl, aged seventeen, who, for four months previous to treatment, had had hypogastric pains and aching in the loins, with slight remissions. The condition was supposed to be one of simple amenorrhœa, until a physical examination was made, when the actual obstacle was discovered in the form of a convex hymen protruding from the occluded vagina. Puncture was effected with a trocar and cannula, whereby nearly a pint and a half of black viscid blood escaped. Through the trocar a needle and thread were passed from within, so as to puncture the hymen higher up; this was drawn out by the thread, and an oval piece cut away with scissors. The pains disappeared, and the girl menstruated for two days more. Whether she subsequently lived or died, the writer does not say.

The case opens with a preliminary flourish and concludes with a peroration, both highly emotional and worthy of a greater occasion; by no means, however, diminishing the clearness of the story, which is narrated with much detail.

RUSHTON PARKER.

KOMOROWSKI ON INTRA-UTERINE INJECTIONS AND THEIR INDICATIONS AFTER CONFINEMENT. — M. V. Komorowski (*Thèse de Paris*, 1876), after making a rapid study of intra-uterine injections,

relates some cases in which they have been performed. These cases are of two kinds: first, after an abortion in which there was retention of the remains of the placenta and accidents happening after eight days; second, after a confinement when serious symptoms of endometritis appeared. In these circumstances the intra-uterine injections made with care, and with the aid of a double-current catheter, have given excellent results.

#### RECENT PAPERS.

Cæsarean Section in a Case of Cancer of the Uterus. By Dr. F. Bechmann. (*Berliner Klinische Wochenschrift*, May 21.)  
On a Human Ovum in the second week of pregnancy. By Dr. K. Breus. (*Wiener Medizin. Wochenschrift*, May 26.)  
On the Course and Treatment of 20,000 Cases of Labour. By Dr. Theopold. (*Deutsche Medizin. Wochenschrift*, May 12 and 19.)  
Two Cases of Puerperal Pleuropneumonia. By Dr. A. Macdonald (*Edinburgh Medical Journal*, May.)

#### OPHTHALMOLOGY AND OTOLOGY.

SMITH ON BILATERAL DEVIATIONS OF THE EYES. — In a late number of the *Royal London Ophthalmic Hospital Reports*, Mr. Priestley Smith recorded a case of this description, which was intended as "an illustration of the fact that there exists in the brain centres which preside over the parallel lateral movements of the eyes, which centres are distinct from those which govern the movements of convergence."

A further series of cases is brought forward by Mr. Smith in the same journal (vol. ix, part i), sustaining the evidence.

In the first case reported, parallel movements were lost, whilst convergent movements were retained—a condition involving alternate paralysis and activity in each of the muscles concerned; the internal rectus of each eye being paralysed or active according as the attempted effort associated it with the external or internal rectus of the other eye. The same muscle was thus shown to be influenced by two brain-centres, one of which may be injured without loss of power in the other. There was no hemiplegia at first. Hemiplegia appeared later, when the eyes were recovering. Its advent induced no fresh deviation of the eyes.

Cases two and three are cases of parallel conjugate deviation, and the eye on the same side as the brain-lesion recovered its movements earlier than the other.

In case four, the conjugate movements upwards and outwards were lost; parallel conjugate movements were retained, and convergence existed in greater than normal degree. The case presented some apparent anomalies. Whilst the convergence was in excess, the accommodation was not proportionately increased. In the author's words, "each eye alone could relax its accommodation in the normal manner for distant vision. It would appear probable that the centre for movements upwards and inwards has no antagonistic power over the accommodation. The accommodation of the eye for distance is purely passive, it is not action but suspension of action—the ciliary muscle has no antagonist."

From this it is argued that, whilst the muscles of convergence gain power through paralysis of the centre governing opposite movements, the ciliary muscle gains no power because it has no opponent;



and so that these symptoms do not, as would at first appear, militate against the supposition that the two acts of convergence and accommodation are presided over by a common brain-centre.

That this explanation of phenomena would be satisfactory there can be no doubt, provided only it were proved; 1st. That accommodation for distance was entire suspension of action; and, 2nd. That the parts of the ciliary muscle were uniform in composition and function.

Now it has been shown by Helmholtz that, when all muscular action is suspended, *e.g.*, after death, the lens presents the curvature which corresponds to accommodation for the nearest point. And, further, there is a great mass of evidence in favour of the division of the ciliary muscle into two antagonistic portions.

Not only has it been repeatedly shown that the ciliary muscle is divisible into a set of radial and a set of circular fibres (however much they may be interwoven), but, in addition, Max Schultze and Iwanoff have demonstrated that in hypermetropes, where accommodation is always in exercise, the circular fibres are in excess; whilst in myopes, where the functions of accommodation begin at the punctum remotum, the predominance belongs to the radial fibres; and that this difference exists in the most manifest and most definite proportions. The strong probability is, as Dr. Warlomont has shown in his exhaustive article (*Annales d'Oculistique*, May-June 1874), that the two sets of fibres are antagonistic, and that the radial fibres are charged with maintaining, by their tonic contraction, tension of the zonula and of the lens; whilst the circular fibres preside over active accommodation.

This view of matters, joined to the well-known variability of relation between accommodation and convergence, shows that the evidence is not yet sufficient in favour of a common brain-centre.

In case five, conjugate movements upwards and outwards were impaired, not completely lost, and convergence was in excess. The case was hypermetropic, and this condition gave rise to the supposition that the symptoms might be due to accommodative spasm.

Atropia, however, whilst it paralysed accommodation, did not at once restore the upward and outward movements. These movements returned gradually. The condition was much masked by nervous disturbance, probably hysterical in character.

Case five is reported, because, at first sight, it might have been mistaken for a bilateral affection, dependent upon central mischief. There was convergence in excess, but movements upwards were neither lost nor impaired. The case was considered to be due to contraction of the tendons of the internal recti, and was relieved by the use of prismatic glasses.

This paper, together with its predecessor, alluded to above, must be regarded as valuable contributions to a subject which has received but little attention.

LLOYD OWEN.

**JAVAL ON COLOURED SPECTACLE-GLASSES.**—At the meeting of the Société de Biologie, Jan. 27, 1877, M. Javal made a communication on the use of coloured spectacle-glasses. He commenced by noticing a recent discovery, by which glasses might be made doubly blue. M. Javal then compared the green glasses, formerly employed, with the blue glasses now universally adopted; he even asked if coloured glasses served any useful purpose. It must

be known, in the first place, in order to give an opinion on this subject, if certain colours are deleterious, and if it is of use to extinguish them. That is the question which must be studied; for the arguments on which blue glasses are recommended are valueless.—M. Rabuteau said that, probably, the colours which correspond to the greatest extent of the light-wave, are the most dangerous to a fatigued eye, and that green glasses, which intercept them, should be preferred to others.

**GUYON ON THE TREATMENT OF SUPPURATIVE OTITIS BY DRAINAGE OF THE EXTERNAL AUDITORY MEATUS.**—In the *Annales des Maladies de l'Oreille et du Larynx*, for Dec. 31, 1876, is an article by Dr. Guyon, of the Neckar Hospital, on the above subject. He says that drainage of the external auditory meatus has enabled him to obtain, in two different cases, very good effects. The surgical means to which attention is drawn is one of the most simple, its application is easy, and its aim well defined. Its object is to ensure by the aid of a drain a free and continual discharge of the pus secreted in or poured into the external meatus. This free and easy discharge rapidly relieves pain. The paroxysms lose their intensity and soon disappear, and the progress of the disease is very favourably influenced. The normal disposition of the external meatus lends itself badly to this free and continued discharge, necessary for the regular cure of any suppurating cavity. It is scarcely necessary to recall to mind the curved direction of its walls, and its narrowing at the point of junction of the osseous and cartilaginous portions, its size being in fact greater at the extremities than in the middle. It is thus easy to see that pus must accumulate in the deeper part of the auditory canal, and that it may, by accumulating, cause pain, and maintain by its imperfect evacuation the lesions which have caused its secretion. The auditory canal follows in this respect the pathological law which governs all suppurating cavities.

The first occasion on which the author applied drainage to the auditory meatus was in October last. He was called in by a *confrère* to a member of his own family, with the idea that he might be able to do something to alleviate the painful paroxysms which had existed for some days, by incising an abscess of the meatus, to the existence of which the pain was attributed.

The inferior wall of the meatus was found swollen and red; but though there was undoubtedly a phlegmonous condition, there was no evidence at any point accessible to a bistoury of any collection of pus. It was stated, however, that pus had previously flowed abundantly, and had recurred several times, and that this appeared to determine the paroxysms.

The author considered that the painful symptoms were due to the retention of pus, but he had never used drainage in a similar case, nor did he know any instance of such a practice. It was inoffensive, however, and was too much in accordance with the tastes of the patient, who strongly objected to the bistoury, not to be proposed. "I took then a piece of drainage-tube, of medium size, and plunged it into the auditory meatus, taking care not to press it against the membrana tympani, and to let it hang out a sufficient distance into the concha.

"There was no immediate discharge of pus, this being one of the periods of remission. The effect of this mode of treatment was, nevertheless, very happy. From the time of the application of the drain there was no paroxysm, and fifteen days afterwards the

patient came to tell me of the excellent result obtained. The drain was cleaned and replaced daily, and the patient, recognising its value, had not yet ventured to do without it completely."

This first case was one of external otitis; the second, which occurred in the practice at the Neckar Hospital, was one of otitis of the middle ear. The patient, a month before admission, had had a simple quinsy, followed by pains in the ear. On admission, he presented all the signs of suppurative otitis media, with perforation of the membrane and invasion of the mastoid cells. The mastoid region was the seat of a very characteristic œdematous swelling, and the tympanic projection was evident. The pain was more severe at night than by day, rest in bed impossible, and mastication painful.

"I immediately applied a drain of middle size, about three centimetres long. The results of this mode of treatment, combined with poultices, were more complete than I ventured to hope. The pain rapidly lessened, and was only very slight on the next day but one after the application. At the same time, the œdematous swelling of the mastoid region diminished and had disappeared by the fifth day; and although the patient is still under treatment, and always continues his drainage-tube, his local state is sufficiently satisfactory to be considered as certain of cure."

W. DOUGLAS HEMMING.

#### RECENT PAPERS.

- Case of Injury to the Eye. By Dr. Grossmann. (*Allgemeine Wiener Medizin. Zeitung*, No. 17 and 19.)  
 On Lupus of the Conjunctiva and Cornea, and on the occurrence of Giant-cells in the Diseased Conjunctiva. By Dr. Laskiewicz. (*Allgemeine Wiener Medizin. Zeitung*, Nos. 18 and 20.)  
 Attempt at a General Explanation of Ocular Movements. By F. C. Donders. (*Annales d'Oculistique*, January, February, March, and April 1877.)  
 Etiology of Neuro-Retinitis. By MM. Warlomont and Duwez. (*Ibid.*)

#### TOXICOLOGY,

**BINZ AND BECKER ON SANTONIN POISONING, AND ITS TREATMENT.**—Poisoning by santonin is very rare. The following were the symptoms in the case of a child aged twenty-five months, described by Binz and Becker in the *Archiv für Experimentelle Pathologie und Pharmacologie*, 1877. Ten hours after swallowing one and a half grains, there were left external strabismus, twitchings of the angle of the mouth, eyes and eyelids, dilatation of the pupils, especially the left; after some minutes, clonic cramps of the left upper extremity, beginning in the fingers, and loss of voice; after fifteen minutes, tonic cramps of the left eye and arm, followed by general convulsions. From time to time there were short intervals of freedom from the cramps. Later on, spasmodic contractions of the thoracic and abdominal muscles set in with marked slowing of the respiration, accompanied by stridor, but the heart's action remained strong, and the pulse was almost normal. After lasting about five hours the cramps disappeared, but reappeared to a less extent, with diminishing severity, for the following three days. All this time the urine was intensely greenish-yellow coloured.

Experimenting with frogs, Binz found that sodium-santonate, in poisonous doses, produced general prostration, cessation of respiration, and, later, convulsions of the trunk and extremities, which were unaltered by the removal of the cerebral hemispheres,

but which ceased entirely when the medulla was excised. The heart at first was unaffected, but after a time came to a stand-still in diastole. The general insensibility that first showed itself was soon followed by paralysis of the nerve-centres, later by irritation of the middle brain and medulla, and finally by general paralysis.

Warm-blooded animals exhibited the same class of symptoms as those manifested in the child—sudden cramps, rolling of the eyes, gnashing of the teeth, opisthotonos passing into cramps of the trunk and extremities, and slowness of respiration—these attacks being succeeded by periods of remission. The parts chiefly affected seemed to be the cranial nerves, from the second to the seventh, the middle-brain, and subsequently the medulla. Santonin does not appear to act as a heart-poison in the ordinary sense.

In Ziemssen's *Handbuch* the treatment laid down is alcohol, artificial respiration, friction of the skin, warm baths, and cold applications to the head. Of these, artificial respiration is the only treatment Binz found of any value. He tried also amyl-nitrite, morphia, chloral-hydrate, chloroform, and ether, but only the last three proved of service. Ether he recommends to be given to overcome the cramps, and at the same time chloral-hydrate, which acts more slowly as an antidote, but with more permanent benefit.

T. CRANSTOUN CHARLES, M.D.

#### CHEMISTRY.

**BISCHOF ON THE DETECTION OF PUTRESCENT ORGANIC MATTER IN WATER.**—In an article on Putrescent Organic Matter in Potable Water, communicated to the Royal Society by Gustav Bischof (*Proceedings*, No. 180, 1877), the author says:

Chemical analysis is incapable of discriminating between living or dead, fresh or putrescent, organic matters. The microscope reveals their nature more fully; but it is nevertheless frequently a matter of great difficulty to decide as to the existence or non-existence of *Bacteria* of putrefaction, or their germs, in water. It thus appeared to me that this information might, in some cases at least, be gained with greater certainty by an indirect method.

If we want to determine whether a gas be carbonic anhydride, we pass it through potash-bulbs, and see whether these increase in weight. Similarly, the presence or absence of putrefactive agencies in water may be determined by their action upon organic matter. The test I selected is fresh meat, as the slightest putrescent changes in it can most readily be detected by its smell.

The experiments which were originally made with a view of determining the improvement of water by certain filtering media, were, with the exception of Experiment VIII, carried out in the following manner.

On to the perforated bottom of a stoneware vessel I place some fresh meat. The vessel is then filled to about two-thirds with the materials to be experimented upon, and lastly with water. Into an opening about two-thirds up a tin tube is fixed, which is first bent upwards and then downwards in the shape of an inverted U, to prevent any bacteria or their germs from passing through this outlet-tube into the bottom of the vessel. An air-pipe (passing down the inside of the vessel) down to the lateral opening, is filled



with firmly compressed cotton-wool; and a glass tube, sealed at its bottom, passed down through the material experimented upon, to allow of the temperature being measured in close proximity to the meat. The vessels thus prepared are immersed in a boiler filled with cold water, which is gradually heated and kept boiling for several hours. The object of this is to destroy any germs adhering to the meat. The temperature at the bottom of the sealed glass tube was, during the boiling, in each of the following experiments 93-95° C. (199.4-203 Fahr.).

After cooling, the Chelsea Company's water was constantly passed through the vessel from the bottom upward, at as nearly as possible a uniform speed.

It is thus evident that any bacteria of putrefaction, or their germs, in the water would, after a time, render the meat putrid; or, if it remain fresh, they must have been absent, or at least inactive, when the water reached the meat.

I now proceed to describe the experiments.

*Experiment I.*—One of the vessels was filled with spongy (metallic) iron, and treated as before described; after a fortnight the meat was perfectly fresh.

*Experiment II.*—A vessel filled with animal charcoal; after a fortnight the meat showed strong evidence of incipient putrefaction. As experiments I and II were conducted side by side, this result proves that the preservation of the meat in experiment I was not due to any external cause, such as the low temperature then prevailing.

*Experiment III.*—Water continuously passed through a vessel filled with spongy iron for four weeks; even then the meat was perfectly fresh and hard.

*Experiment IV* was a repetition of II, the filtration of water through animal charcoal being continued for four weeks. The meat was soft and quite putrid. In the course of this experiment, the exit-tube was several times choked by mucous matter.

*Experiment V.*—In experiments I and III with spongy iron, this material was employed without separating any of the fine dust. In order to ascertain whether Bacteria were merely mechanically retained, a vessel was charged with spongy iron, from which all the finer particles had been separated by a sieve with thirty holes on the linear inch. The filtering medium in this case was therefore of a porous nature. After four weeks' filtration, the meat was perfectly fresh.

*Experiment VI.*—In the previous experiments with spongy iron the meat was in contact with water, from which the iron in solution had not been separated. With a view of ascertaining whether the iron in solution was the preserving agent, a stoneware vessel was charged underneath the spongy iron with pyrolusite and sand, so as to abstract the iron from the water before it came into contact with the meat. After four weeks' filtration, the latter was found perfectly fresh.

*Experiment VII.*—By a separate experiment I ascertained that the oxygen is completely abstracted from water during its passage through spongy iron. In order to determine whether the absence of oxygen be the cause of the preservation of the meat, and whether the Bacteria or their germs be killed or can be revived when supplied with oxygen, an evaporating basin was inverted over the meat. This must have retained a quantity of air in its cavity, the air being gradually dissolved by the water in close proximity to the meat. After four weeks' filtration the meat was perfectly fresh; I succeeded in collecting a small

bubble of the gas, still in the cavity of the evaporating basin. This was quite free from oxygen.

It is, therefore, doubtful whether oxygen was supplied to the water sufficiently long to justify any conclusions from this experiment. However, the result of Experiment VIII rendered a repetition unnecessary.

*Experiment VIII.*—Fresh meat was placed at the bottom of a glass vessel and left standing, covered with about four inches of spongy iron and water. The vessel, in this instance, was *not* boiled. After three weeks the meat was very bad, demonstrating that the action of the bacteria of putrefaction adhering to the meat was not prevented by the spongy iron above, and if, during the previous experiments with spongy iron, agencies capable of causing putrefaction had at any time come into contact with the meat,—in other words, if the Bacteria had not been killed in their passage through spongy iron, the meat must, as in this last experiment, have shown marks of their action. It, therefore, appears that Bacteria are permanently rendered harmless when passing in water through spongy iron. This conclusion is further corroborated by the observation that even effluent sewage-water, after passing through the spongy material, has remained perfectly bright for now five years, when exposed to light in a half-filled stoppered bottle.

I believe that the action of spongy iron on organic matter largely consists in a reduction of ferric hydrate by organic impurities in water. We know that even such organic matter as straw or branches is capable of reducing ferric to ferrous hydrate. We know that even such indestructible organic matter as linen and cotton fibre is gradually destroyed by rust-stains. This action is slow when experimenting upon ordinary ferric hydrate, but it may, *in statu nascenti*, be very energetic—the more so, if we consider the nature of the organic matter in water. Ferric hydrate is always formed in the upper part of a layer of spongy iron, when water is passed through that material. The ferrous hydrate resulting from the reduction by organic matter may be re-oxidised by oxygen dissolved in the water, and thus the two reactions repeat themselves. This would explain why the action of spongy iron continues so long.

It is, however, quite certain that there is also a reducing action taking place when ordinary water is passed through spongy iron. This is clearly indicated by the reduction of nitrates.

ESBACH ON THE GASOMETRIC ANALYSIS OF UREA.—To quantitatively analyse urea by means of sodium hypobromite, Dr. Esbach, of the Neckar Hospital, now makes use of a new piece of apparatus, which he calls the gasometric analyser. (*Bulletin Général de Thérapeutique*, February). It is composed of two parts, one being the generator, and the other the gasometer. The generator is a cylindrical glass tube with a bulb in its upper third, closed below, and fitted with an accurately ground stopper. The gasometer consists of a somewhat wider graduated tube, open below, and about twice the length of the generator, with the top of which it communicates above by means of a narrow tube. A solid band of glass unites the bottom of the generator to the side of the gasometer about its middle.

The reagent employed, the so-called hypobromite of soda is thus prepared:

Water	...	60	cubic centimètres.
Sodic hydrate (36°)	40	"	"
Bromine	...	2	"

As it decomposes by keeping, it should never be prepared more than eight days in advance. The irritation produced by the vapour of bromine, is avoided by having some water in the flask holding the bromine. The water floats on the bromine and allows very little vapour to escape when the stopper is removed. The necessary quantity can easily be withdrawn by a graduated pipette, the little layer of water that enters with the bromine allowing the operator to aspirate without any risk from the vapours.

The stand of the apparatus being fixed at the bottom of a jar containing water, the apparatus itself is introduced vertically and with the stopper out; the water, in consequence, rises in the gasometer to a mark in the little tube communicating with the generator. With the aid of a funnel, the reagent is poured into the latter until it rises as high as the bulb. Into another little tube of small bore, 1 c.c. of urine is dropped, and this is then carefully introduced into the generator, which is closed at the same time by its glass stopper. The evolution of nitrogen commences immediately. By raising the apparatus, the water in the gasometer tends to sink, and causes an aspiration, thus facilitating the disengagement of the gas, which is generally completed at the end of a minute. The level of the water inside and outside the gasometer having been made to coincide, the value of the gas is read off. Correcting for temperature, pressure, and tension of aqueous vapour, it will be found that one centigramme of urea gives 3.4 cubic centimetres (or thirty-four divisions) of nitrogen at 0° and 760 millimetres.

To avoid these necessary calculations, Dr. Esbach has introduced what he calls a correcting baroscope, and a set of baroscopic tables. The baroscope consists of a barometer U-tube, the closed end of which is dilated, and contains some chemically inert gas, and the other is drawn out to a fine point. The gas is separated from the atmosphere by a column of mercury, above which is a drop of water that maintains it always in a state of saturation. Here are realised the conditions under which a gas is collected in presence of water. The graduation that the instrument bears expresses the resultant of the atmospheric pressure, temperature, and aqueous tension. When the volume of nitrogen is read off, the baroscope is consulted, and a reference to the tables will give the amount of urea present in the urine.

Dr. Esbach claims rapidity as well as accuracy for his method. An analysis requires about five minutes, and the results obtained do not vary more than 1.6 per cent. In the case of albuminous urine, as the hypobromite decomposes albumen, it is necessary to separate this substance, which is readily done by boiling and filtering; but, if the urine be alkaline, it must first be acidified by the careful addition of a few drops of acetic acid.

In addition to urea, uric acid and creatinine are attacked by the hypobromite; but with this difference, that the urea is decomposed almost instantaneously, which is not the case with the others. In the conditions of the present analysis, however, taking place instantaneously and in the cold, the error is so slight that it may be entirely neglected.

T. CRANSTON CHARLES, M.D.

## REPORTS OF FOREIGN SOCIETIES.

### SIXTH CONGRESS OF THE SOCIETY OF GERMAN SURGEONS.

April 5. *Effects of Septic Infection.*—Dr. Hueter, of Greifswald, demonstrated on the palpebra tertia of a dog, the changes produced in the flow of blood in the living vessels by the fever excited by septic infection. The phenomena were the same as those observed in rabbits, which he had demonstrated at the Congress of 1876.

*Blood-cyst in the Neck.*—Dr. Hueter showed a blood-cyst removed from the neck of a young man. It formed a swelling as large as two fists on the right side of the neck. Its growth was at first slow, but afterwards rapid. On removal, it was found to be connected with a large and short branch of the internal jugular vein; it lay on the carotid, and extended from the angle of the jaw to the clavicle. When the cyst was excised, blood mixed with fibrinous clots escaped.

*Disease of the Foot.*—Dr. Hueter showed a boy, aged 9, of weakly constitution, who had been admitted in August, 1876, into the Surgical Clinic at Greifswald with disease of both feet. The right tarsus was especially diseased, and there was a purulent deposit in the right os calcis. On September 9, Dr. Schüller performed total resection of the right tarsus. Healing and formation of new bone soon took place. In the meantime the disease in the left os calcis, which Dr. Schüller had treated by scooping and drainage, had spread; and on November 9, Dr. Hueter performed resection of the left tarsus. The inner malleolus was preserved; but nearly the whole astragalus was removed, and only the shell of the os calcis was left. Recovery was rapid. On both occasions, drainage, antiseptic dressing, and plaster of Paris bandage, were used. The boy walked with the help of a stick, the feet being supported in boots with lateral splints.

*Hydronephrosis in a Movable Kidney: Cure by a Renal Fistula.*—Dr. F. Winkel, of Dresden, referred briefly to the cases described some years ago by Gustav Simon, in which hydronephrosis had been treated by an external opening, and to his statement that hydronephrosis had not yet been observed in a movable kidney. He related the following case. The patient, a young woman aged 21, was confined for the first time in June 1876, having an easy labour. She had previously had good health; but, from the middle of her pregnancy, she observed between the right anterior superior spine of the ilium and the umbilicus a swelling, which continued to increase gradually after her confinement. In the beginning of October 1876, it extended from the brim of the pelvis below to the liver above, and lay mostly on the right side, reaching only about a third of an inch beyond the middle line. There was distinct fluctuation all over the tumour, the surface of which was mostly smooth, with some prominences. On the right side, at a limited point above the umbilicus, the percussion-sound was tympanic. By palpation, it was ascertained that the tumour was not connected with the pelvic viscera. It was considered that the case was one either of hydronephrosis or of hydatid of the liver. By puncture, five and a half pints of light yellowish fluid were removed, in which no



organic structures could be found by the microscope. Chemical examination detected serum-albumin with paralbumin, some sugar, much chloride of sodium, with succinate of soda, but no trace of urinary constituents. At the end of December, four fine trocars fixed in a leaden plate were introduced, and between three and four ounces of almost colourless fluid were removed daily. After the removal of the fluid, an incision rather more than three inches long was made where the tumour had become adherent to the abdominal wall. The fluid which escaped contained much pus; and as the sac continued to empty itself, there occurred considerable arterial hæmorrhage, which was found to proceed from a portion of kidney-tissue adherent to the wall of the abdomen. The pelvis of the kidney could be distinctly felt with the finger. This confirmed the statement of Simon, that in some cases the diagnosis of hydronephrosis could only be determined by examining the inner surface of the tumour and recognising the renal pelvis. To arrest the hæmorrhage and form a renal fistula after Simon's method, Dr. Winkel united the external skin to the inner surface of the cyst by sutures applied above and below, and on the right and left. A thick pad of cotton-wool dipped in solution of salicylic acid was laid over the tumour, and compressed against the spine by a bandage. The whole operation was performed with antiseptic precautions. On recovering from anæsthesia, the patient had some dyspnoea; but the bleeding was arrested, and did not recur when the dressing was renewed two days later. The reaction was moderate, the amount of pus diminished, the fluid became more clear, and contained only cells from the pelvis of the kidney and ammoniacal salts, and the patient only became feverish when the secretion did not escape readily. The rapid diminution of the tumour and contraction of the aperture increased the tendency to retention of the secretion, even when the patient was out of bed and moved about, and led Dr. Winkel to substitute for the drainage-tube which had been used an apparatus which the patient continued to wear. This consisted of a hard India-rubber tube, about four inches long, bent in the direction of the pelvis of the kidney, and having a number of wide openings; it was connected externally with a plate about an inch and a half in diameter, which was secured to the abdomen by an elastic bandage. The secretion was received into a gum-elastic bottle, fastened over the plate. With this apparatus the patient could work without pain, and had remained several months free from fever. The case was evidently one of hydronephrosis affecting a movable kidney. The diagnosis was arrived at from the following circumstances. The vertebral column could be reached with the finger above the brim of the pelvis and below the tumour; there was a thick layer of renal tissue in front of the tumour, while, in ordinary cases of hydronephrosis, the kidney lies posteriorly; and the relations of the ascending colon and stomach were different from those found in hydronephrosis affecting a fixed right kidney. Moreover, the fistulous opening into the pelvis of the kidney was near the umbilicus, and not, as in Simon's cases, towards the lumbar region. On palpation, the tumour could be distinctly felt to be of about the size of an apple. The patient's general health was good. The urine was normal in quantity, and contained no albumen nor sugar.

*Gunshot-wound of the Knee.*—Dr. Volkmann showed a patient who had recovered from a gunshot-wound of the knee. An hour and a half after the

injury, considerable effusion of blood into the joint took place. Dr. Volkmann made a single incision, which was extended. The ball had entered through the external condyle of the tibia, and on removing it air entered the joint. After the removal of the ball, a counter-opening was made, and the cavity of the joint washed out. A double drainage tube was inserted, and antiseptic dressing applied. There was no fever nor suppuration. The patient recovered with good functional power in the limb.

*Antiseptic Treatment of Wounds.*—Dr. Ranke gave an account of the results of antiseptic treatment in Dr. Volkmann's practice at Halle. From 1874 to 1876 inclusive, 24 cases of penetrating wounds of joints had been treated, and in 1877 two, including Dr. Volkmann's case related above. None of the 26 patients died. Among these, secondary amputation was performed in four cases of severe splintering of the bones of the forearm, and in one of fracture of the femur opening into the hip-joint, with delirium, all recovered. Fourteen cases treated from the commencement were dismissed with movable joints, and in three, admitted after suppuration had set in, the result was ankylosis. The following cases were also admitted: one of transverse division of the patella, cured in eight weeks with a movable joint; two very severe complicated dislocations and fractures of the ankle, which also recovered with useful joints; and a contused wound of the knee, completely healed in thirteen days. No death occurred in any of these cases, nor ankylosis. With regard to dressing, special attention was directed to the following points. Primary disinfection was carefully performed with a 5 per cent. solution of carbolic acid. Drainage-tubes were applied early, not transversely through the joint, but with the upper end lying in the cavity. Washing out the joint with irritant disinfectant fluids was avoided. Lister's antiseptic gauze was applied, and the limb was placed on a splint; plaster of Paris was not used. Passive movements were commenced early.

*Excision of the Hip-joint.*—Dr. Schede, of Berlin, showed two cases of excision of the hip-joint with successful results, the power of flexion and abduction being to a great extent retained. In one case the patient, a girl, had central osteitis of the head of the femur, bursting suddenly into the joint.

*Osteotomy of the Bones of the Leg.*—Dr. Schede showed three successful cases. In one, a case of rickets, he had sawn out a wedge-shaped piece from each tibia and fractured the fibula. The lower fragments had to be pressed outwards against the upper, in order to place the foot in a right position. A case of genu valgum was treated by chiselling out a wedge from the tibia and dividing the fibula by a chisel. There was also an interesting case of periostitis of tibia, followed by increase in the length of the bone, which became bent. Osteotomy was performed here also, with a successful result.

*Injury of Shoulder; Arrest of Growth of Arm.*—Dr. Vogt, of Greifswald, showed a man aged 21, who when 10 years old received an injury of the shoulder, after which the growth in length of the upper arm was completely arrested, the growth in thickness not being interfered with. The length of the right humerus was 35 centimètres (13 $\frac{3}{4}$  inches), that of the left only 22 centimètres (8 $\frac{3}{4}$  inches). The transverse diameter was the same in both arms, and the muscles were well developed. The injury was a traumatic separation of the upper epiphysis of the humerus, leading to premature ossification of the epiphysis with the diaphysis, which had as its result complete

arrest of the growth of the humerus in length. The head of the bone was pushed slightly forward and displaced from the diaphysis; in the intervening space callus could be plainly felt, but there was no trace of the occurrence of inflammation or suppuration. Active and passive movements were normally performed; abduction of the arm at the shoulder was interfered with, partly by the displacement of the head of the bone, partly by atrophy of the deltoid muscle. No history could be found in literature of analogous cases of arrest of growth of the bone in length, without previous extensive inflammation and suppuration. Bryant had described a case in a woman in which the humerus was shortened by five inches, after an injury received at the end of five years; there was, however, ankylosis of the shoulder-joint. Dr. Vogt had produced premature ossification of the intermediate cartilage, with arrest of growth of the bone, in young dogs, by subcutaneously separating the epiphysis from the diaphysis.

*Growth of Bones.*—Dr. F. Busch, of Berlin, made a communication on feeding with madder as a means of ascertaining the formation of bone-substance. He gave an account of the history of the subject, in which Du Hamel, Flourens, Lieberkühn, and Kölliker were mentioned as affirming the value of the experiments with madder, and Serres, Doyère, and Strelzoff as denying them. Dr. Busch had used madder in two cases of artificially produced disease of bones in grown dogs. As yet, he could only show two results. In both cases (the experiments having been made on the radius and tibia) there was necrosis, and not, as was intended, inflammation. There was no inflammation of the ulna and fibula; in these, the tissue newly deposited from the periosteum was coloured red, and could be plainly distinguished from the old white bone-substance. The sequestra were white, and their shells were red; no conclusion, however, could be drawn from this. In the bones which were not diseased, colouring took place in spots, especially in the spongy substance, in the epiphyses, and at the insertions of strong muscles. Dr. Busch believed that the formation of bone did not cease with the completion of the growth of the bones in length, but continued, though in a slight degree, throughout life.

*Antiseptic Treatment of Wounds.*—Drs. Volkmann and Paul Kraske gave an account of the cases of severe operation and injury treated by the antiseptic method in the surgical clinic at Halle during the three years from March 1, 1874, to March 1, 1877. Cases of ligature of arteries, operations on tumours, severe injuries of the hand, operations in which the abdomen was opened, etc., were not included. The number of cases treated was about 10,000, and the great operations and severe injuries exceeded 1,000 in number. *Amputations and Disarticulations:* A. *Uncomplicated Cases.*—1. Disarticulation of the humerus, 4 cases; 1 death after four hours. 2. Amputation of the humerus, 14 cases; no deaths. 3. Amputation of the forearm, 23 cases; no deaths. 4. Disarticulation at the wrist-joint, 3 cases; no deaths. 5. Disarticulation at the hip-joint, 2 cases; 1 death four hours after the operation. 6. Amputation of the thigh, 42 cases; 1 death after 24 hours, in a case of injury of the soft parts extending beyond the buttock. 7. Amputation of the leg, 25 cases; 1 death from erysipelas. 8. Partial amputation of the foot, 42 cases; no deaths. Total of uncomplicated cases, 139; 4 deaths, 42.87 per cent. B. *Complicated Cases.*—1. Double amputation, 9 cases; 2 deaths; viz., C. W., aged 49, primary amputation of both

thighs for injury, death on the third day from collapse; and H. B., aged 23, primary amputation of both thighs for injury, death in a few hours. II. *Severe multiple injuries*, 6 cases, all fatal. 1. K., aged 54; fracture of most of the ribs and of the sternum; primary amputation of the arm; death within 24 hours. 2. W., aged 14, injury of the head; concussion of the brain; simple fracture of one femur; primary amputation of the other; death after 40 hours. 3. M., aged 24, severe contusion of the abdomen; primary amputation of the thigh for injury; persistent collapse; no septic infection. 4. R., aged 67, multiple fracture of the ribs; much hæmorrhax; primary Pirogoff's amputation of the right foot; amputation of the left thigh; death in 7 hours. 5. B., aged 22, fracture of the frontal bone and ribs; primary amputation of both thighs; death after 11 hours. 6. A. H., aged 73, primary amputation of the thigh; severe injury of the hand, treated conservatively; death on the fourteenth day from tetanus (the amputation-wound had nearly healed by the first intention). III. *Cases admitted with Septicæmia or Pyæmia.*—1. A man, aged 57, admitted with severe progressive suppuration of sheaths of tendons following whitlow, and septicæmia; amputation of the forearm; death after two days. 2. A man, aged 38, septic gangrene of the arm after complicated dislocation of the ulna; amputation of the humerus; recovery. 3. A man, aged 40, traumatic gangrene of the arm; suppuration of the sheaths of tendons and of the intermuscular areolar tissue; several rigors; amputation of the humerus; recovery. 4. A man, aged 48, spreading septic phlegmon from injury of the hand; disarticulation of the humerus; death after three days; 5. A man, aged 42, admitted with acute purulent œdema on the second day after an injury of the leg; amputation of the leg, afterwards of the thigh; death eight days after the second amputation. 6. A boy, aged 14, admitted with pyæmia following an injury of the soft parts received 19 weeks previously; amputation of the thigh; recovery. 7. A man aged 41, admitted with septicæmia and gangrenous emphysema, the result of a railway injury, amputation of the thigh; death in 36 hours from spread of the gangrenous emphysema. 8. A man, aged 38, admitted with gangrene after complicated fracture of the leg; amputation of the thigh; death in 48 hours, from spread of the gangrene. 9. A male, aged 19, pyæmic osteomyelitis of the tibia; suppuration of the knee-joint; amputation of the thigh, recovery. 10. A man, aged 46, traumatic gangrene of the leg; sloughing phlegmon about the knee-joint; amputation of the thigh; recovery. 11. A man, aged 65, suppuration of the knee-joint; septicæmia; amputation of the thigh; death on the fifth day. 12. A boy, aged 13, complicated fracture of the leg; spreading septic inflammation; amputation of the thigh; recovery. 13. A man, aged 49, complete embolic gangrene of the leg, and pyæmia; amputation of the thigh; death on the following day. 14. A woman, aged 25, spreading phlegmon and gangrene following injury of the soft parts of the hand and forearm; disarticulation of the humerus; death in a few hours. 15. A man, aged 60, poisoned wound of the finger; acute purulent œdema; amputation of the humerus; recovery. Total of amputations in cases of septicæmia or pyæmia, 15; deaths, 8 = 52.33 per cent. IV. *Cases of death from Intercurrent Diseases not directly connected with the injuries.*—1. A man, aged 60, amputation of the thigh; aseptic dressing of the wound; death from delirium tremens. 2. A girl aged 17, amputation of the thigh for tubercular suppuration of the



knee-joint; death on the 21st day from pneumonia, the amputation-wound being nearly healed. 3. A girl, aged 24, spreading phlegmon following whitlow, amputation of the humerus; while the wound was healing favourably, and the temperature was normal, the patient aborted, and died of puerperal pyæmia on the fifteenth day after the operation. Total of all the amputations and disarticulations, 172 patients, 183 amputations; recovered, 149 patients with 156 amputations; died, 23 patients with 27 amputations.

—*Resections of Joints. A. Uncomplicated Cases.*—1. Resection of shoulder-joint, 7 cases; 2. Resection of elbow-joint, 8 cases; 3. Resection of the wrist, 2 cases; all these recovered, 4. Resection of the hip-joint, 48 cases, with 4 deaths. Two occurred in children aged nine months and 2½ years, from collapse; one from thrombosis of the femoral extending into the iliac vein two months after the operation; one from hæmorrhage produced by erosion of an artery by scrofulous suppuration of the lymphatic glands 3½ months after the operation (the iliac artery was tied). How many of the patients subsequently died of pulmonary or meningeal tubercle, or of albuminuria, was not known—perhaps eight or ten. 5. Resection of the knee-joint. In 2 cases, secondary amputation of the thigh was performed; both recovered. Resection was done in 20 cases for fungous inflammation and caries, and in one for a disunited transverse fracture of the patella. In the 21 cases, there was one death, three weeks after operation, from tubercular meningitis, there being no disturbance in the wound itself. 6. Resection of the ankle-joint: 5 cases, no deaths. Total, 91 cases, 5 deaths.

*B. Complicated Cases.*—1. Resections in patients admitted with septicæmia or pyæmia, 4 cases, all fatal. *a.* A man aged 27; gunshot wound and smashing of the pelvic bones eight days before admission; sanious discharge in joint; resection; death from septicæmia. *b.* A woman, aged 29; disease of the hip-joint following labour; death from septico-pyæmia on the fourth day after resection. *c.* A boy aged 9¾; multiple purulent deposits in joints after scarlatina and diphtheria; resection of a diseased hip-joint; death on the eighth day from septico-pyæmia. *d.* A man, aged 68; fungous inflammation of old standing in the elbow-joint; acute ichorous suppuration with spreading phlegmon; death from septicæmia six days after resection. 2. Deaths from intercurrent diseases not directly connected with the wounds, 2 cases, *viz.*, from delirium tremens in a man aged 35, in whom resection of the ankle-joint had been done on account of injury; and from pulmonary tubercle and repeated hæmoptysis in a man aged 58, whose shoulder had been excised for tuberculous caries.—*Resections in the Continuity of Bones:* for false joint, 9; for badly set fractured clavicle and paralysis of the arm, 1; total, 10 cases, no deaths.—*Osteotomy:* fifty operations on 38 patients. On the femur, three cases of simple division, and 10 of removal of a wedge of bone. On the tibia, 25 operations of simple osteotomy in 15 patients, and 12 of a removal of a wedge in 12 patients. There was one death, in a patient the subject of hæmorrhagic diathesis (not known before the operation), who died in little more than twenty-four hours after osteotomy of the femur for ankylosis of the knee. On *post mortem* examination, much extravasated blood was found in the pelvis, etc. Osteotomy was done in 7 cases for ankylosis of the hip, in 10 for ankylosis of the knee (1 death) in 1 for talipes equinus, in 23 for rickety curvature of bones, in 8 for genu valgum, and in 1 for deformity from badly united fracture.

Secondary amputations of the thigh were done in two of the cases of osteotomy; *viz.*, a man with a high degree of genu valgum following arthritis deformans, and a boy in whom deformity and bending of the tibia was produced by a central enchondroma. Both recovered.—*Operations on the Breast:* 119 operations on 110 patients (with 6 deaths), two died from erysipelas, occurring in one after the omission of the antiseptic dressing, and in one from bed sores in the sacrum; 1 from collapse a few hours after operation; 1 from malignant pustule through catgut-poisoning; and two from exhaustion. *Antiseptically treated Incision in Hydrocele:* 45 cases. All the cases followed the usual course: in one, however, the silken sutures by which the tunica vaginalis was fastened to the skin of the scrotum, having been cut too short, became enclosed in the wound, from which some of them were discharged at a later period. The healing process was much retarded, and in subsequent cases catgut-sutures were used. *Compound Fractures.* Since the introduction of the antiseptic method (four and a half years) 75 compound fractures in 73 patients had been treated, with no deaths. In 8 cases, secondary amputation was performed, *viz.*, thigh, 4; leg, 1; arm, 2; forearm, 1; no deaths occurred among these. The 75 compound fractures included: thigh, 1; knee, 4; leg, 42; arm (both arms in one case) 6; elbow, 5; forearm (on both sides in one patient) 15. *Accidental Traumatic Diseases.* No deaths from pyæmia occurred among the cases of operation and injury treated by Volkmann during the three years comprised in the present report; nor was there a case which could be correctly called one of simple pyæmia. No death from acute or subacute septicæmia was observed among the patients treated antiseptically in the clinic or polyclinic. There were, however, three fatal cases of total gangrene of the lower extremity after ligature of the femoral artery; in these cases, while death was the result of septic infection, this did not take its origin in the wound. There were many cases of chronic septicæmia in the extended sense which is now given to the word; but none of them were connected with the occurrence of acutely progressive suppurative or ichorous inflammation. There were no cases of acute purulent or ichorous phlegmon, acute purulent œdema, acute suppuration of the sheaths of tendons, etc., during the three years. Erysipelas occurred in three or four of the cases treated antiseptically, and in a small number of the non-antiseptic cases. Tetanus occurred in four cases, of which two recovered, and two died.—In reply to a question of Dr. Küster regarding the death from malignant pustule through catgut poisoning, Dr. Volkmann said that in a female patient (who recovered) mortification of the skin, connective tissue, and muscular tissue, took place at the point where the catgut had been applied. In the other, a malignant pustule was formed on the wound with a fatal result. In both cases, the catgut was derived from the same source.

*Treatment of Constitutional Syphilis.*—Dr. Ziemssen of Wiesbaden read a paper on the treatment of constitutional syphilis, founded on the observation of nearly 1200 cases, mostly severe, occurring in private practice during the last eight or nine years. He laid down as a fundamental law that no remedy could be absolutely depended on for the cure of the constitutional disease. This being assumed, the treatment was, in the first place, directed to the symptoms; and those remedies were to be preferred which did least injury to the body while combating the individual symptoms. In the second place,

attention must be paid to the greater or less frequency of relapses. Passing to the surgical part of the subject, Dr. Ziemssen advocated specially the local treatment of the individual symptoms of syphilis. This was formerly, and still continued to be, frequently neglected and even discountenanced, on the ground that the simultaneous local treatment prevented a proper judgment of the general from being formed. Since 1869 Dr. Ziemssen had steadily carried out this plan, and had found it to essentially assist and shorten the treatment. This treatment comprised not only the cleansing and surgical cure of ulcerations, but also scraping with the sharp spoon, excision of extensive indurations, incision and emptying of gummata, removal of necrosed portions of bones, etc. Regarding the chief kinds of general treatment, Dr. Ziemssen said that the various diaphoretics, such as sarsaparilla, described as specifics, acted only by diaphoresis, which could be produced to as great an amount, and as efficaciously, by drinking a similar quantity of warm water, followed by wrapping. In judging of the value of sulphur-baths as specifics, either the negative observations on the absorption of the salts dissolved in the water, or the hydrosulphuric acid hypotheses, were usually mentioned. The results of the analysis made at Aix-la-Chapelle by Dr. Wings showed that the designation sulphur-bath was an illusion. [The reading of the paper was here interrupted by Dr. Esmarch, who was in the chair, the statutory twenty minutes having expired.]

*Spermatocele.*—Dr. Menzel of Trieste described a case of spermatocele in which a direct communication with the testicle was proved to exist. When the latter was compressed, the cyst became distinct, and *vice versa*. The case was interesting in having afforded an opportunity of studying the development of the seminal filaments.

#### ACADEMY OF MEDICINE IN PARIS.

March 25. *Hysterotomy.*—M. Péan showed some anatomical specimens from a case of hysterotomy which he had performed that morning on a woman, aged 53. The body of the tumour was constituted by the hypertrophied uterus, covered on the exterior with a very vascular peritoneum, with highly dilated blood-vessels, and a muscular coat, which completely surrounded the removed mass. The tumour showed two large cysts developed in the thickness of the muscular tissue.

*Poisoning by Agaricus Bulbosus.*—Dr. Oré presented a note on experimental researches on poisoning by *agaricus bulbosus*. In this memoir the author examined—1. The nature of the true principle of *agaricus bulbosus*; 2, its mode of action on the organism; 3, the remedies by which it can best be combated. The true principle of *agaricus bulbosus* is in effects similar to the salts of strychnia. Whether the fresh mushroom, or dried specimens, or vinegar in which this poisonous mushroom had been macerated were used, whether it were taken into the stomach or used in subcutaneous or intravenous injections, the results were the same. Intravenous injection brought on almost immediately convulsive fits, which, by the suddenness of their appearance and their rapidly fatal progress, brought to mind the diverse phases of strychnic tetanus. Solutions of the poisonous solanaceae in presence of animal charcoal give up to it their alkaloid; the same thing occurred with macerations of *agaricus bulbosus*. The

author concluded from these researches that *agaricus bulbosus* heightens the excitability of the motor and vaso-motor portions of the spinal axis; by directing towards these centres an antagonistic substance, chloral for instance, this action may be prevented.

*Cotton-Wool Dressings.*—Dr. Desormeaux read a memoir on union by the first intention under cotton-wool dressings. To obtain this result, when the amputation or disarticulation is finished, M. Desormeaux washes the wound with water and carbolic alcohol, or solution of chloral; then applies the suture by the aid of fine annealed iron wires, leaving in the most suitable place a space without junction where he places a drainage-tube. Afterwards he applies the cotton-wool dressing to the stump, removing it after twelve or fifteen days to take away the drainage-tube, the ligature-wires, and the sutures, which have become useless. Then, after a fresh washing out, he again applies the cotton-wool dressing, and leaves it twelve or fifteen days before finally removing it; at this stage the cicatrix is consolidated. Up to the present this method has yielded excellent results.

April 3. *Cerebral Localisation.*—M. Gosselin read, for a commission composed of MM. Bouillaud, Charcot, Cohn, Broca, and Gosselin, a report on the memoirs by MM. Proust and Lucas-Champonnière. The first of these memoirs was entitled "Contributions to the Study of Cerebral Localisations." It related to a young man, aged 19, in whom, after a fracture of the skull with depression of the left parietal bone, the twelfth day after the accident, aphasia, notable weakness of the right forearm, and an almost complete paralysis of all the muscles moved by that portion of the right facial nerve which was distributed below the orbicularis palpebrarum, supervened. The trephine having been applied above and behind the part driven in four days previously, and the bony fragments removed, some drops of pus mixed with blood exuded; the dura mater, when laid bare, was found to be intact and depressed; it rose gradually to the level of the aperture in the bone, and the functional disturbance diminished, and disappeared in the space of two months. MM. Proust and Terrillon had attributed this successful result to the removal of the depressed fragments which had caused lesion in the portions of cortical substance which, according to the resources of Fritsch, Hitzig, and Ferrier, confirmed by those of Carville, Duret, and Charcot, are the motor centres for the arm and the face; and also at the same time the operation had relieved the third left frontal convolution, in which M. Broca has localised the faculty of articulate speech. This hypothesis had been confirmed by observations on several dead bodies. But this fact, though important in a physiological point of view, left one pathological point uncertain, the determination of the lesion which occasioned the paralysis. Compression would have produced its paralyzing effect immediately, and not twelve days after the injury; irritation or inflammation at the level of the compressed point would have occasioned contractions and convulsions, as in Dr. Ferrier's experiments, and in the clinical facts of Messrs. Charcot, Landouzy, and others; so that it was not exactly known what had been cured, or whether the lesion of the brain which produced paralysis might not actually have disappeared spontaneously. M. Lucas-Champonnière's work, entitled "Indications for trephining, drawn from Cerebral Localisations", contained a similar fact. It also related to a fracture of the skull with depression of the left parietal bone,



followed by paralysis of the right arm with aphasia and epileptiform fits, all which phenomena disappeared after trephining. Here also the kind of lesion was not clearly made out. However, M. Lucas-Champonnière expressed the opinion that modern physiological research will clear up the questions relative to the propriety of trephining, and to the choice of the situation in which it should be made. M. Gosselin, however, considered that the chief indication for trephining was the existence of a wound with fracture and depression, much more than the functional disturbance resulting from it. In this case, from the moment that there was solution of continuity, there was no great danger in increasing it; on the other hand trephining gave issue to pus and to blood effused between the dura mater and the bone, and relieved the brain from the fragments of bone which might wound it, and thus diminished the chances of septicæmia, meningitis, and encephalitis. Here, however, the situation for operation was thoroughly indicated. In cases where there was functional disturbance connected with Ferrier's centres, without wound or fracture, M. Gosselin did not advocate trephining to remedy them; in the first place, because lesions of the optic thalamus and the corpora striata might also occasion these disturbances, and also because, even if the motor centres were injured, a cure might be effected without operation. When the cranium was intact, there was no need to fear septicæmia and circumscribed intracranial suppuration; traumatic meningitis was more susceptible to resolution; it was in these ways that death supervened after penetrating fractures in conjunction with wounds; it would, therefore, be dangerous to make a penetrating solution of continuity which had not until then existed. The preceding remarks were applicable to depressed fractures without any wound. As to fractures of the vitreous table, it was very difficult to recognise them, the functional signs being *nil*, or those usually attributed to concussion or contusion. M. Gosselin did not allow the use of the exploring trephine in gunshot wounds where there was presumably a fracture of the inner table, except when symptoms appeared at the outset depending on the cortical centres, and later on an assemblage of symptoms, such as obstinate headache and fever, giving rise to the belief in an accumulation of pus between the bone and the dura mater. Finally, the new physiological views were useful as auxiliaries to the diagnosis and interpretation of the functional symptoms, but very rarely adjuvants to treatment, because trephining should be considered as an operation much more useful for preventing septicæmia, and the retention of pus in the interior of the cranium, than for remedying lesions of the encephalon by bony fragments or other wounding bodies.

**Diabetic Glycæmia.**—Dr. Armand de Fleury, of Bordeaux, read a paper in which he attributed the production of glucose in diabetic patients to a dynamic and a chemical cause, one influencing the other. The dynamic cause was a vaso-motor paresis having its seat in the arterio-venous capillaries. In diabetic patients this paresis depended on a lesion of the nerve-centres, located either on the pneumogastric nerve which was in a state of pathological hyperæsthesia, or on the great sympathetic, which was hyposthenised. It consequently brought on an abnormally rapid flow of arterial blood, and a diminution of the conflict between oxygen and carbon. The oxygen, insufficiently utilised, united itself to the water of the serum to become peroxide of hydro-

gen, which would not undergo further decomposition in the internal media. Setting out afterwards from the opinion that, in the first instance, it was the sulphocyanide of potassium of the saliva, and the taurocholate of soda of the bile which, in setting free a sulphuretted principle when these salts were reduced by the contact of feculent matters, generated dextrine, and then glycogen by catalytic contact; the author concluded that, in consequence of the well-demonstrated catalytic properties of oxygenated water, the sulphuretted principles acquired a tenfold power of generating animal sugar. In the liver there would only be a refining of glucose into glycogen, and the liver would rather act as a storehouse of the sugar than as a primary manufactory.

**April 10. Sleep.**—Some of the writers on the physiology of sleep attribute it to a congested condition of the brain, others to cerebral anæmia. M. Willemin, who read a memoir on the subject, took his place in the latter rank. The physical conditions of the encephalic cells after a period of activity modify the vaso-motor innervation, the cerebral vessels contract, and the afflux of blood diminishes, the functional activity of the brain is suspended, sleep ensues, and repair of the nerve-elements is effected. In order to awake, the irritation carried to the brain by some one of the sensory nerves, or even the fact of the repair of that organ, induces action of the nerve-cells. This phenomena immediately brings on vascular dilatation, and the functional activity of the brain recommences. In sleep produced by anæsthetics, a special physico-chemical action of the toxic agent on the brain-cells is undoubtedly seen. By a reflex effect the vessels contract, and the blood does not arrive in sufficient quantity to excite cerebral activity. Magnetic sleep depends on a reflex action working from the eye on the nerve-centres of the vaso-motors.

**Gastrotony.**—Dr. Lannelongue read a note on a case of gastrotony. The plan of operation was precisely in accordance with that of M. Verneuil. Some modifications might be made in it as follows:—1. Never to go lower in the incision of the integuments than the level of the lower edge of the eighth left costal cartilage, so as to come down more directly on the anterior septum of the stomach, which in these cases is always shrunk up and raised towards the diaphragm, in consequence of long abstinence from food; 2. To open the anterior wall in the neighbourhood of the lesser curvature, so that secreted or injected liquids do not flow outwards; 3. Not to apply to the edges of the orifice hæmostatic forceps, nor the fastening threads of the catheter left *in situ*, in order to avoid laceration and mortification.

**Compression by Air or Water.**—M. Chassagny, of Lyons, read a paper on a plan of methodical compression by air or water. This compression is the result of the inflation of a very thin India-rubber bag, which, distended by the injection of air or water, is supported on the outside by an inextensible envelope, which allows it to react by its opposite surface on the region to be compressed. This compression is applied to limited spaces; for instance, to the breast, to tumours, or in a circular fashion to the limbs, either in their length or at their extremities. The author laid stress on the nature of the compression, which does not resemble in any particular that produced by other apparatus. It acts with perfect regularity and equality, is perfectly well tolerated, completely annuls muscular contraction, and presents the distinctive characteristic that, when applied

along a limb, it never produces œdema of the lower uncompressed portions.

April 17. *Ætiology of Typhoid Fever.*—At the meeting of March 13, M. Jaccoud had presented a series of one hundred and six facts, observed between 1865 and 1875, whence he had drawn the conclusion that faecal matters might be an active and sufficient cause of typhoid fever. On this occasion, he completed his first communication by the examination of the questions raised by this first conclusion. In the first place, are faecal matters noxious of themselves, without any distinction, as Dr. Murchison thinks, whatever be their quality and origin? This opinion cannot hold in presence of the thousands of negative facts which every year and in all countries demonstrate the pathogenic inertia of faecal matters, accumulated under the most unfavourable conditions. To be typhogenic, they must differ in some particular from ordinary faecal matters. This peculiarity is supplied by the typhoid poison. As to the origin of this poison, it is generally admitted that it only exists in excreta, so far as it has been introduced into them by the dejections of a patient affected by typhoid fever. Then, under the influence of the addition of these specific matters, modification very similar to fermentation is effected by propagation, and the entire faecal mass, which has received the morbid products, acquires the morbid power more or less quickly. Unfortunately this opinion, so attractive in its simplicity, cannot be reconciled with the whole series of facts. In some of them, the first typhoid case is absolutely wanting. Out of the one hundred and six cases above referred to and examined from this aspect with the necessary exactness, the excreta were present in thirty-six; but in twenty-four they were positively absent. How then should we interpret these twenty-four cases in which matters, up to that time inert, suddenly became noxious? Either they underwent some special change whence resulted the typhoid poison, or the poison was brought from a distance by atmospheric currents, unless it be admitted that it is the living organism which has undergone the change necessary for the development of typhus fever—a doctrine on which M. Jaccoud did not touch.

*Tarsalgia of Adolescents.*—M. Gosselin exhibited an anatomical specimen relating to a case of adolescent tarsalgia. The case was that of a young girl who came into hospital for uncomplicated tarsalgia. This was neither deviation of the foot, nor sensation of cramp, nor contraction of the leg. Under the influence of rest in bed, and after the application of a blister, the pains soon disappeared, and in a month's time the patient was about to leave the hospital, when she was attacked by typhoid fever, and soon died. At the recovery, the medio-tarsal articulation, properly so called, was intact. The changes affected—1. the articulation of the scaphoid with the second and third cuneiform bones; 2. the articulation of these two bones with each other; 3. their articulations with the second and third metatarsals. The line of articulation could scarcely be found, the scalpel only penetrated it with difficulty. There were only vestiges of the synovial membranes left. They had completely disappeared at the central portion, where the spongy tissue of the bone was laid bare; the two bony surfaces in contact seemed to have begun to adhere to each other. The neighbouring portion of the articulation had undergone a certain amount of rarifying osteitis. These changes somewhat resembled those of arthritis deformans, with the exception of the exostoses, which in this case were alto-

gether wanting. On the other hand, the erosion of the articular cartilages was greater. If the patient had survived, it is probable that there would have been complete ankylosis. The peroneal muscles did not show any change.

April 24. *Typhoid Fever.*—At the meeting of February 27 M. J. Guérin had laid before the Academy the result of his experiments, undertaken with the object of demonstrating the existence of a toxic principle in the excreta of patients suffering from typhoid fever. But these matters being, when they leave the animal economy, a collective and complex residuum of those met with in the stomach and in the small and large intestines, it was necessary to experiment separately with each of them. M. Guérin had done this, with the following results. The vomited bilious matter, the bile, the true faecal matters coming from the large intestine, caused death only in very exceptional cases. The special matter, that coming from the small intestine, had in more than thirty experiments almost always caused death, sometimes in a few hours, sometimes in some days, and that at any and every period of the disease.

*Influence of Climate and Race on the Progress of Wounds and the Gravity of Surgical Operations.*—To obtain the most definite results, M. Jules Rochard made his researches in extreme latitudes, in the polar regions and in the torrid zone. In the polar regions, cold alone needs to be taken into account, and this continuous cold is very hurtful to the progress of wounds. Erosions, and slight wounds suppurate, ulcerate, become complicated with erysipelas and angioleucitis, and scurvy frequently supervenes to make them more serious. The healing of wounds and cicatrization is very slow. It takes a very long time to repair the losses of substance which follow frost-bite. Cure, however, is the rule. There are no complications to be feared; and tetanus is not more common than in temperate latitudes. In hot climates the temperature, endemic diseases, and race, must all be taken into consideration. The action of high temperature is very favourable to the progress of wounds. In the tropics, wounds heal more quickly, and surgical operations succeed better than in Europe. The complications which carry off those operated on, are not of the same character; they are either tetanus or hæmorrhage. Traumatic fever is less intense, and lasts a shorter time than in Europe. Erysipelas, diffuse phlegmons, and purulent infection, are extremely rare in these regions. In marshy countries, wounds frequently have the effect of reproducing attacks of intermittent fever in persons who have before suffered from it; in their cases the traumatic fever often assumes an intermittent character, and these attacks impede the cicatrization of the wounds, and give them an unhealthy appearance. Chloro-anæmia, with infiltration, is still more troublesome; under its influence, the smallest erosions of the legs give rise to intractable ulcers. Finally, chronic dysentery weakens the system, and increases the chances of a fatal result. With reference to race, M. Rochard had been able to verify two facts pointed out by naval surgeons; the resistant power which the races in the French colonies oppose to wounds, and the slight resultant reaction; but he believed that it was going too far to deny the existence of traumatic fever in the coloured races. In conclusion, he pointed out the immunity shown by opium-smokers from tetanus, and the quickness with which they fell under the influence of chloroform.



## ACADEMY OF SCIENCES.

March 12. *Unipolar Excitation*.—A note by MM. Morat and Toussaint treated of the electrotonic condition in cases of unipolar excitation of the nerves. Experiments had demonstrated that in conditions of unipolar excitation, the current of the pole may influence the nerve-current at a distance, only its electrotonising influence is much weaker than in bipolar excitation. The modifications produced by the unipolar current on the nerve-current are the inverse of those produced by the bipolar-current. They are also the same whatever extremity of the nerve may be examined.

*Poisoning by Acetate of Copper*.—MM. Feltz and E. Ritter stated that eight fasting dogs were dosed with one gramme of a solution of acetate of copper (one in twenty) to each kilogramme of weight. Four died in a few hours after having had vomiting, diarrhoea, and convulsions. The loss of weight varied from 26 to 42½ ounces. The four others recovered, after having suffered digestive disturbances for forty-eight hours. To two other dogs a smaller quantity of the poisonous solution was administered immediately after food. They recovered, after having vomited about two hours.

March 19. *Muscular Tonicity*.—M. G. Carlet communicated his experiments on muscular tonicity. If a frog be suspended by the head, and the spinal cord be divided, it is found, in accordance with Brondgeest's experiments, that section of the lumbar nerves of one side alone completely paralyses the corresponding limb. According to M. Carlet, this only takes place when the section implicates one of the nodal points, of which Budge speaks, and which are not excitable. In the majority of cases, on the contrary, section would bring on stimulation of the corresponding nerves and contraction of the muscles.

March 26. *Cinchonidine*.—In reference to a note by M. Weddell on cinchonidine, M. Pasteur disclaimed the honour of having discovered this substance. He had simply pointed out the existence of two series of alkaloids, quinine, quinidine, quinicine, all three isomeric; and cinchonine, cinchonidine, and cinchonicine, likewise isomeric.

*Albumen in the Egg*.—M. Van Tieghem communicated his researches on the digestion of albumen in the egg. One variety, the oleaginous and aleuric albumen, digested itself; the two others, the amylaceous and cellulosic albumens, were digested by the embryo.

*Trephining*.—M. Sédillot refuted some statistics published in Langenbeck's *Archiv*, in favour of tardy trephining in fractures of the skull. In his opinion, as he had frequently stated, vitreous fractures complicated with splinters are most quickly cured by preventive and speedy trephining.

*Transfusion of Blood*.—M. Larrey presented a note by M. Oré on a case of chronic anæmia supervening on obstinate nervous symptoms and digestive disturbances which had lasted five years. A cure was effected by transfusion of 40 grammes (less than 1½ ounces) of blood.

*Bichromate of Potash*.—M. Laujorrois presented a note on the antiseptic properties of bichromate of potash. Experiments had shown him that the addition of one-hundredth part of bichromate in ordinary water prevents the putrefaction of all sorts of organic matter, such as meat, urine, &c. A thousandth part of bichromate prevents beer from turning sour. After three months' immersion in a

watery solution of bichromate meat presents the appearance of gutta serena, and dogs will not eat it.

April 2. *Catgut Ligatures*.—M. J. Bœckel communicated two cases of aneurism at the bend of the elbow successfully treated by the antiseptic catgut ligature. Carbolised catgut threads assist the obliteration of the arteries, and allow the ligature to be brought nearer to the origin of the collateral branches.

*Carbonic Acid of the Blood*.—M. L. Fredericq read a note on the carbonic acid of the blood. In opposition to the ideas hitherto prevalent, the author held that the red corpuscles of the venous blood fix a quantity of carbonic acid, but always rather less than the serum.

April 8. *Presence of Zinc in the Bodies of Animals and in Vegetables*. MM. G. Lechartier and F. Bellamy had convinced themselves by careful experiments that the zinc could not have been introduced by the distilled water, by the reagents, or even by the gas flame impinging against the brass gas brackets and burners. These experiments were highly important even in a toxicological point of view, and it would not be enough to recognise the presence of very small quantities of zinc either in the liver of a man or in the matters contained in his stomach or intestines to come to the conclusion that it was a case of poisoning.

*Toxic Action of Copper*.—The facts already made public by M. Galippe had been confirmed by the researches of MM. Pelikan, Daletzki, Szumowski, Burq, and Ducom, but the experiments required to be repeated on the human subject. To fill up this hiatus, M. Galippe for a whole month lived on food (fish, meat, and vegetables) cooked in copper vessels with or without vinegar, and either eaten immediately or 24 and 36 hours after preparation. This food, eaten either hot or cold, and with special care not to remove the copper compounds, did not produce any special symptoms in him. The results were the same with M. Galippe's family, on whom he repeated the experiments.

April 16. *Septicity*.—M. V. Feltz presented a note, in which he communicated experiments showing that the septicity of putrified blood does not depend on a soluble ferment.

*Salts of Copper*.—M. Decaisne presented a note on poisoning by salts of copper. He had noted in a paper in 1864 that a large number of inferior samples of absinthe had all the characteristics of sulphate of copper. Amongst the hundred and fifty drinkers whom he had been able to trace, a certain number showed symptoms of copper-poisoning.

April 30. *Insolation*.—M. Chevreul presented a memoir on a phenomenon in insolation of the eye which had not yet been explained. Experiments which he had made proved that a black feather was seen red when the eye had undergone insolation; for the left eye, which had not felt it at all, saw the feathers in the same way as they are seen by ordinary vision in the shade.

*Septicity of Blood*.—M. V. Feltz communicated experiments demonstrating that the septicity of putrified blood depends on figured ferments.

May 7. *Charbon*.—M. Bouley presented a note on the identity of charbon in all kinds of domestic animals. He recalled to mind the whole of the facts which in conformity with M. Chabert's doctrine established the unity of charbon in all animal species, and submitted to M. Pasteur some of the difficulties of the problem which this chemist was endeavouring to solve by experiment.

## REVIEWS.

*A System of Medicine.* Edited by J. RUSSELL REYNOLDS, M.D., F.R.S. Vol. IV. containing Diseases of the Heart. Pp. 806. London: Macmillan & Co., 1877.

In our first notice of the present volume of the *System of Medicine* (see LONDON MEDICAL RECORD for March, page 123) we examined in some detail the articles by the late Dr. Sibson on the normal and abnormal positions of the heart, on Pericarditis and Adherent Pericardium, and on Endocarditis, which make up rather more than two-thirds of the book. The articles on Pericarditis and on Endocarditis naturally occupied most attention, having the greatest interest for the every-day working physician. Similarly the remaining articles, though all of great value, do not all call for an equal share of notice.

Dr. Peacock fittingly begins the book with a chapter, brief, but extremely useful for reference, on the Weight and Size of the Heart. Dr. Peacock also contributes two other articles on Lateral or partial Aneurism of the Heart, and Adventitious Products in the Heart, respectively, and he treats of these uncommon diseases in his usual thorough manner. These chapters are of especial value from the extended experience of the writer, and they abound in references to other authors. That growing register of well-attested observations, the *Pathological Transactions*, is in especially frequent request for reference in these articles, and, indeed, strikingly so throughout the work. There is but little to be said about those rare affections, pneumo-pericardium and hydro-pericardium, save in connection with pericarditis, and the late Dr. Warburton Begbie's articles therefore call for but a passing notice. Carditis, again, is a disease which does not separately come under the notice of the clinical physician, and therefore, perhaps, scarcely merits an isolated consideration.

One of the most interesting articles in the book, and the one which, from the subject of which it treats, will be most often consulted by the reader, is that on Diseases of the Valves of the Heart, by Dr. Hilton Fagge. It cannot fail to be noticed, however, that this article and that on endocarditis, by Dr. Sibson, are for the most part dealing with the same thing, inasmuch as the majority of valve-diseases are of inflammatory origin. We think this, however, by no means impairs the value of either article; for, whilst Dr. Sibson deals with these lesions more from the pathological and etiological side, Dr. Fagge, on the other hand, begins with the valve-lesions, describing their anatomy, and explaining the clinical signs to which they give rise, and the mechanical and structural consequences that ensue from them. A certain degree of repetition in the two articles was inevitable, and on some moot points the opinions of the authors are widely different. For instance, whilst Dr. Sibson adopts the usual explanation of the aortic and pulmonary anæmic murmurs, viz., that they are due to the vibrations caused by their blood being propelled through more or less flaccid vessels, Dr. Fagge, accepting the theory of Corrigan and Chauveau, regards them as being produced by a mechanism very similar to that by which, according to the same observers, organic murmurs are caused, i.e., not by the friction of blood upon roughened or flaccid vessels, but by the entry of blood from a narrower to a wider channel, whereby a vibratile jet or ripple of

blood is occasioned, giving rise to an audible sound. In support of this hypothesis, in its bearing upon anæmic murmurs, Dr. Fagge, p. 629, quotes Chauveau as having shown that in anæmic horses "the arteries generally are one-third smaller than in healthy animals; the mass of the blood is greatly reduced; the heart and its orifices become diminished in size, so as to adjust themselves to the altered volume of the blood, but the great arteries, being comparatively inelastic, retract less perfectly. The conditions for the production of a murmur are thus satisfied." Dr. Fagge, however, makes an important addition to these conditions when he further points out that the *range* of arterial pressure in anæmia is much increased, the pressure during diastole being very low, whilst the pressure during systole is "far greater than in health." It is, at all events, more suddenly developed, and this increased impetus, with relaxed vessels and a thin blood, one would think, accounted more satisfactorily for the production of murmurs in certain regions than the more obscure theory of Chauveau. Again, Dr. Fagge consistently believes the *bruit de diable* in the great veins of the neck to be due to the lower ends of the subclavian and jugular veins being unable from adhesions to the cervical fascia to become in accord with the diminished calibre of the vessel above, forming a venous ampulla, the blood entering which from the contracted veins is thrown into vibrations, and gives rise to murmur. We should accept this explanation also with considerable hesitation. Persons in whom these murmurs are loudest show no signs that the bulk of the blood is lessened; they are the reverse of shrunken-looking; then again, the murmur, so far from being limited to the root of the neck, may in many extreme cases be heard downwards to the margin of the sternum at the second cartilage, and in many cases of anæmia in which the bruit is well marked, a distinct thrill or light palpitation may be felt over the course of the vein. These facts would make us inclined rather still to accept the view more commonly held, that the vibration of a thin blood and a flaccid vein give rise to this murmur. The author, at page 611, draws attention to the observation of Dr. Moxon on the rareness with which aortic obstruction is met with, clinically, apart from regurgitation; and in confirmation of this remark of Dr. Moxon's, he states that, during a period in which 71 cases of aortic regurgitation were noted at Guy's, only two cases of aortic stenosis had been recorded. We apprehend that the unwritten experience of clinical physicians will have prepared them readily to accept this opinion, so opposed to that usually taught; and we gladly accept Dr. Fagge's remark as a protest against the use of the terms aortic obstructive or constrictive murmur in describing the systolic bruit frequently heard over the aortic cartilage, since these terms are always inadequate, and, as Dr. Fagge shows, generally inaccurate in their application to the lesion they are supposed to indicate. Whilst with valve-disease we almost always get regurgitant murmurs, a systolic murmur, on the other hand, bears many and diverse meanings. Dr. Fagge finds, however, that with respect to the mitral valve the opposite conditions obtain, pure regurgitation<sup>e</sup> being extremely rare, there being usually more o<sup>s</sup> less constriction of the orifice also present. Clinically, this latter observation is not really of the same importance, since it does not affect the significance of the regurgitant murmur, for regurgitation by no means implies a widened orifice. And the narrowing, although it may be generally found as a matter



of tape-measurement, yet is in comparatively few cases sufficient to give rise to any clinical phenomena apart from the valve incompetency. Dr. Fagge makes yet another very important observation respecting the mitral valve, at p. 631, that all systolic apex-murmurs are by no means due to mitral regurgitation, as they are generally held to be. He maintains that a systolic apex-murmur not unfrequently exists without any incompetency of the valve, in cases in which the left ventricle is dilated. In such cases the dilated ventricle does not perfectly contract and discharge its contents during systole; some blood still remains behind in the recess between the valve and the wall of the ventricle, and is there thrown into vibrations, thus generating a murmur. This murmur, however, unlike the typical mitral regurgitant *bruit*, is limited to the apex, not being conducted round to the scapular region. This observation is very interesting, inasmuch as it helps better to explain those not very uncommon cases in which a distinct apex-murmur, not of rheumatic origin, disappears altogether after a time, giving place to a normal first sound. An important indication for prognosis is suggested by Dr. Fagge in cases of aortic regurgitation to be obtained by ascertaining whether the murmur be conducted solely in a downward direction, or also along the course of the aorta. Bergeron, in his experiments, found that a murmur generated in a tube by the passage of the fluid from a narrower to a dilated part, was conducted only in the course of the stream; but if at the seat of constriction a small lip or rim were provided so as to project slightly into the channel, a second murmur became audible behind the constriction in a direction contrary to that of the current. So in aortic regurgitation, if the valves be completely incompetent, the murmur is carried solely downwards; if, on the other hand, the valves still project somewhat, and thus partially close the orifice, the murmur is also heard along the course of the aorta, the latter cases being, of course, the less grave. Having noticed these few points, which appear to us of most novel interest in this comprehensive and masterly article of Dr. Fagge's, we must pass on to the other portions in the book.

The article on Angina Pectoris, and Sudden Death, by Professor Gairdner, is peculiarly interesting, the more so as the illustrative cases are those of Seneca, Hunter, and Chalmers. That vague and terrible group of symptoms constituting angina can only be described by sufferers of more than common courage in analysing their own sensations, and power in describing them fully, yet without exaggeration. To this fact may perhaps be traced, as hinted by Professor Gairdner, the impression that angina is more frequently to be met with amongst the higher and more intellectual classes. Professor Gairdner does not omit to point out many times in his elaborate article the mystery and uncertainty that baffle any attempt rigidly to define or explain the malady so aptly named by Heberden. Nevertheless, he shows how clinical and therapeutical observations have combined in recent times to indicate that in cases in which the angina attacks are traceable to somewhat different central causes, there is a common condition present—increased arterial tension—which seems essential to their continuance. These observations, which have at different times been made by Drs. Richardson, Gamgee, and Lauder Brunton, consist firstly in the two former observers having ascertained that the physiological action of nitrite of amyl—or rather one of its actions—is to lower arterial ten-

sion by diminishing the contraction of the arterioles. Secondly, at a later date, Dr. Brunton, in a case of aortic valve-disease, and cardiac hypertrophy, attended with attacks of angina, ascertained by repeated sphygmographic observations that during these attacks the pulse-wave became small, blunt-pointed, with slow recoil and obliteration of dicrotism, showing much increased arterial tension, and that these characters came on suddenly and were attributable to spasm of the small arteries. The administration of the amyl-nitrite vapour at once relieved the angina, and restored the amplitude of the pulse wave. Professor Gairdner does not accept without reserve Dr. Brunton's conclusion that the angina attack and the arterial spasm have a simple causative relation to one another. He thinks it probable that the remedy has also some important action upon cardiac innervation, but it is undeniable that with the acquisition of a most valuable remedy for this terrible pain we gain an insight into what may be its most common mechanism.

Dr. Gowers completes the volume with a series of articles on Atrophy, Hypertrophy, Dilatation, and Fatty Degeneration of the Heart. These articles are very carefully and thoroughly written; they abound in references to the views of other authors, and contain much original observation.

R. DOUGLAS POWELL, M.D.

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*Cyclopædia of the Practice of Medicine.* Dr. H. VON ZIEMSEN. Vol. VI. Diseases of the Circulatory System, together with the chapters on Whooping Cough, Diseases of the Lips and Cavity of the Mouth, and Diseases of the Soft Palate. English Translation. Pp. 1,014. London: Sampson Low and Co. 1876.

Making allowance for the larger type of the German cyclopædia, and for the additional subjects contained in it, there is probably not very much difference between the amount of space devoted to Diseases of the Heart in it and in the fourth volume of Dr. Russell Reynolds's *System of Medicine*. If anything, Dr. Reynolds' contains the most matter. But the style and mode in which their subjects are treated are essentially different. The average reader will probably prefer the German work, whilst Dr. Reynolds' volume contains most solid work, and no Englishman need blush at any comparison or examination of the two works.

In the German work we are reviewing, Dr. Rosenstein, now of Leyden, late of Berlin, contributes the Introduction to Diseases of the Heart, containing the general anatomy, means of diagnosis, &c., and Diseases of the Endocardium, including the valvular lesions and diseases. This part is carefully translated by Dr. Edward G. Geoghegan. Dr. Leopold Schrötter, of Vienna, writes on Changes in Position of the Heart-Substance, including wounds and foreign bodies in the heart. This portion is translated by Dr. George G. Wheelock. Lebert (rendered into English by Dr. Thomas Dwight) contributes the chapter on Congenital Diseases of the Heart, including acardia and the various forms of cyanosis. Quincke (now of Berne) deals with Diseases of the Arteries, Veins, and Lymphatics. The name of Dr. George W. Balfour is a sufficient warrant for the excellence of this translation. Bauer, of Munich, treats of Diseases of the Pericardium, and has been well rendered by Dr. Wheelock. The remainder of this handsome volume of over 1,000

pages is filled with an article by Steffen (of Stettin), Whooping Cough (translated by Dr. J. H. Emerson), and Vogel's Diseases of the Lips and Cavity of the Mouth, including angina Ludovici (Ludwig's angina, cynanche cellularis maligna) or acute inflammation and suppuration of the cellular tissue beneath the chin, in the environs of the submaxillary glands, a disease which has scarcely received any attention in England, except a few cases reported in the last year or two, although Bamberger cites Hippocrates as the earliest writer on the subject. Wagner (of Leipsic) finishes this capital volume by an article on Diseases of the Soft Palate. This is translated by Dr. J. Solis Cohen, and we presume he is also the translator of Vogel's article, mentioned above. The volume contains a number of diagrams of sphygmographic tracings. Some of these are of considerable interest; especially the diagram on page 43 of pulsus alternans or bigeminus, taken from a paralysed arm in a case of systolic and præ systolic murmurs, with hypertrophy of the left ventricle and albuminuria. We began by stating that no exact comparison could be made between the English and German Cyclopædias. Both are good, but their goodness is not of the same kind. We think Von Ziemssen's volume best adapted to busy practitioners, whilst a well stocked medical library should include both. In each case the publishers and printers have done all in their power to make the mechanical execution a success.

W. BATHURST WOODMAN, M.D.

*Tables of Materia Medica: a Companion to the Materia Medica Museum.* By T. LAUDER BRUNTON, M.D., Sc.D., F.R.C.P., F.R.S., Assistant-Physician and Lecturer on Materia Medica at St. Bartholomew's Hospital. London: Smith, Elder, and Co.

Any help towards giving effect to the principle, sanctioned by the General Medical Council, but not yet realised, of a "definition of the areas of instruction and examination," must be looked on with satisfaction by teachers who wish to improve on the average attainments of the pupils they send out from their schools. To few departments of medical study is this principle so applicable as to the subject of *Materia Medica*, which contains in its vast store of facts a considerable number uselessly burdening the memory. Besides the insignificance of a large part of this field of study, the student has to deplore in most text-books a greater want of orderly arrangement than even the confessedly disjointed nature of the subject matter seems to justify. The first step towards this necessary simplification was taken in the publication a few years ago of a *Syllabus of Materia Medica*, by Drs. Harvey and Davidson of Aberdeen, in which the drugs of the *Pharmacopœia* are marked according to their relative values, certain of them being selected which the instructor should chiefly, the examiner wholly, regard. Dr. Brunton in his present book has done more valuable service. Adhering to the system of noting the relative value of the drugs, according to the Aberdeen syllabus, he has succeeded in these tables in compassing his objects (1) of recalling to the student's mind what he has learned from larger text-books; and (2) of helping him to arrange the material he has acquired.

In the first part of the book, relating to the inorganic substances, we see arranged, each in separate parallel columns, the substance, its source, prepara-

tion, physical properties, reactions, impurities, source of impurity, tests for impurities, action, uses, and dose. The order followed in the arrangement of the substances differs from the alphabetical one of Garrod and the *Syllabus*; sulphuric acid, for example, heading the list of the acids, because it is used in their preparation; and, in the case of metals, that compound being placed first from which the others are made. This method, showing the mutual dependence of some of the facts to be learnt, often, for instance, explaining the source of impurities, &c., is worthy of being followed. The organic drugs are arranged according to Garrod in botanical and zoological order, the tables exemplifying in separate columns the source, both botanical and geographical, the part used, preparation, characters, substances resembling it, "how known," composition, action, uses, and dose.

The columns in each part relating to the impurities, and to the substances resembling the drug under consideration, with the method of their recognition, are especially useful; the more so, because the information on these points incorporated in the text-books is often passed over for want of being marked with sufficient clearness. The physiological action and uses are treated, as the author allows, in a most meagre way, this meagreness being the more conspicuous when we remember who the author is; but scanty treatment under this head is necessitated by the tabular form, and justified by the desirable divorce of therapeutical disquisitions from the early teaching of *materia medica*. We think, however, that Dr. Brunton might well have specified the use of nitrite of amyl (which, with its physiological action, he has so well elucidated himself) instead of leaving a blank space; especially when we observe him giving that of the hypophosphite of lime, which certainly rests on far lower authority and less certain observation.

It would have added somewhat to the clearness of these tables had the author given an explanation of the different kinds of type he employs. These refer to the relative values of the substances and preparations, and scarcely tell their own tale at first sight to a beginner unacquainted with the syllabus of Drs. Harvey and Davidson, which Dr. Brunton's book, in virtue of its otherwise clear and careful preparation, is destined not only to supplement but to supersede. These tables will be welcomed by teachers as by far the most comprehensive and useful syllabus yet published, and by all students as an invaluable aid at all times, notably so on the eve of examination.

HORATIO DONKIN, M.B.

*Leprosy in India.* A Report by T. R. LEWIS, M.B., and D. D. CUNNINGHAM, M.B., Special Assistants to the Sanitary Commissioner with the Government of India. Calcutta, 1877.

According to the returns of a general census in 1872, there are 99,000 lepers in the territories under British rule in India, yielding a proportion of 54 lepers to every 100,000 of the entire population, or 1 leper to 1,845 persons. One-eighth of the whole number is contributed by certain districts, each of not less than 100,000 in population, furnishing a ratio nearly five times higher than the average ratio for the whole of India. In these districts there is a leper to every 384 persons.

An instructive leprosy map of India is prefixed to the report.

In one of the worst districts, Kumaon, a leper asylum has been founded by Sir Henry Ramsay,



with accommodation for over a hundred lepers; and the report consists chiefly of clinical observations on eighty inmates of this institution, whose condition and history were subjected to the closest scrutiny. Of these cases 49 were of the anæsthetic variety, 12 tubercular, 15 "mixed", and in 4 cases an eruption formed the most pronounced symptom.

The disease was found not to be contagious, but to be strongly hereditary. The lepers in the asylum marry, and in some cases have children, but the number born to lepers is so small that it barely equals the loss by death.

The figures indicate an apparent preference of the disease to follow the female line of descent.

In the blood of many of the lepers the number of white corpuscles was in excess. In some the excess was very strongly marked, and the normal white corpuscles were accompanied by an abundance of smaller bioplasmic fragments. In some cases, a soft and adhesive condition of the red corpuscles was found.

The features and general course of the disease in India appear to agree with those observed in other countries in which leprosy is common.

G. THIN, M.D.

*Clinique des Nouveaux-nés. L'Athrepsie.* Par J. PARROT, Professeur à la Faculté de Médecine de Paris, etc. Pp. 450. Paris, 1877.

THE subject of malnutrition in new-born infants is one which has at all times received much attention from writers on disease in children. The facility with which the ordinary processes of nutrition are interrupted, and the rapidity with which alarming symptoms follow upon this interference, render the subject as interesting as it is important. In the present volume, Dr. Parrot has added one more to the list of writers who have connected their names with this form of illness.

The author limits the term "new-born" to infants during the first two months of extra-uterine life, and proposes the name of *athrepsia* (a privative, *θρεψις* nutrition) for the state of general weakness which at this age is the direct consequence of serious interference with the nutritive functions. The various derangements common to this period of life he describes as symptoms—"variable in their number, but invariable in their succession"—of this condition.

After an interesting account of the functional and organic changes which take place in the infant at and immediately after birth, the author proceeds to describe *athrepsia*. He divides the disease into three stages. In the first there are signs of digestive derangement, and the infant becomes thirsty, fretful, and restless. In the second the child wastes; the looseness of the bowels becomes a confirmed diarrhoea; signs of acid fermentation of food are noticed, and there are acid eructations and vomiting. The mucous membrane of the mouth is redder and drier than natural, with spots of thrush. Erythema is seen on the buttocks. The appetite fails; the temperature falls; the pulse becomes feeble; the skin is inelastic and flaccid. The disease then passes into the third stage: all the symptoms are intensified; the diarrhoea is fetid and profuse; the vomiting obstinate; the wasting marked, and the weakness extreme. The breath is cold; the temperature low; the extremities livid; and, finally, some cerebral disturbance—atresia of pupils, squint, or convulsions—ushers in the fatal termination. Cerebral symptoms occurring at the close of life in an infant worn out

by bad feeding and exhausting influences are, as other observers have pointed out, frequently independent of structural alterations such as can be discovered by examination of the dead body. It is not, however, uncommon to find intra-cranial hæmorrhage, the effusion passing into the arachnoid sac, the cerebral substance, or the cavities of the ventricles; but these hæmorrhages are seldom accompanied by symptoms during life. Still, we must not in every case, when cerebral symptoms are noticed, look upon the case as one of "spurious hydrocephalus". Von Dusch has connected some of these cases, in which coma, with dilated pupils and occasional strabismus, have been prominent symptoms, with thrombosis of the cerebral sinuses; and there is little doubt that an actual impediment to the cerebral circulation, and not merely a sluggish circulation through the brain of impoverished blood, is sometimes, at any rate, a cause of the symptoms in question. The author himself is inclined to look upon such symptoms as toxic, the blood being charged with excrementitious matter which it cannot get rid of, and proposes for them the term "*Encéphalopathie urémique*." At a time when these symptoms are present, the urine is as a rule greatly diminished in quantity, and may even be suppressed, and the symptoms themselves resemble exactly those to which we are accustomed in cases of uræmic poisoning.

Considerable space is devoted to a description of the morbid appearances found in the body after death; indeed, the anatomical characters of *athrepsia* occupy nearly half the volume. Some interesting facts are brought forward with regard to the spread of the *oidium albicans* along the alimentary canal, and the view commonly entertained, and supported by the authority of Trousseau, that thrush does not pass beyond the limits of the gullet, is declared to be erroneous. The author agrees with Billard, Valleix, Robin, and others, that, in spite of the gastric juice, the vegetation may develop upon the mucous membrane of the stomach. With the aid of the microscope, he has detected the sporules not only in the stomach, but also in the intestines. In these situations the rash presents itself under a different aspect from that with which we are familiar in the mouth. In the stomach its ordinary appearance is that of small grains, separate or grouped together, and of variable size, seldom larger than a millet seed; sometimes so small that they can only be detected by a lens. The smaller are pointed; the larger are slightly depressed in the centre. In colour they differ little as a rule from the mucous membrane on which they lie, but some have a waxy-yellow tint. They adhere firmly to the membrane, and can be neither washed away nor scraped off. Their favourite seat is the posterior surface, especially in the neighbourhood of the posterior curvature, and nearer to the cardia than the pylorus. The surrounding mucous membrane either retains its natural grey tint, or is rose or violet-coloured. On placing one of the small projections under the microscope, it is seen to be composed of the characteristic sporules mixed up with epithelial cells, fat globules, &c. On examining sections of the mucous membrane made perpendicularly to the surface, the parasitic vegetation is found in some parts to have destroyed the more superficial portions of the glands, and to have penetrated into their interior, and also, although to a less degree, into the intervening tissue. In the intestine, the existence of thrush was also detected by the aid

of the microscope, on two occasions. In each case its seat was the cæcum. Whether the parasite is capable of attaching itself to the anus appears to be doubtful, for an examination by the microscope of the whitish pultaceous matter sometimes found in that region, and which bears the naked-eye characters of thrush, discovered merely pavement-epithelium in stratified layers, with some doubtful cells, which "presented a certain analogy with the filaments of thrush."

With regard to the causes of infantile atrophy, improper feeding naturally takes the first place. As the author truly observes, in cases which present all the signs of starvation, it is usually to unsuitable food and not to any lack of feeding, that the inanition is to be ascribed. The difference between human and cow's milk, and the baneful practice of feeding infants on starches and other kinds of food equally inappropriate, are causes amply sufficient to account for the large mortality amongst hand-fed infants, especially in large towns.

The chapter on treatment is the least satisfactory part of the book. In recommending human milk as the best remedy, the author is no doubt treading on sure ground; but unfortunately so many cases are met with, where this method of feeding is impracticable, that some definite directions how best to provide a satisfactory substitute for the mother's milk might surely have been looked for. All that the author has to recommend is goat's milk, to be drawn by the child directly from the udder; or, in default of this, cow's milk given undiluted in small quantities at a time. Goat's milk, no doubt, often furnishes a satisfactory diet to young children, although in composition it resembles more nearly the milk of the cow than that from the human breast. Its strong flavour is seldom objected to by the child, and, if the milk is sucked from a feeding bottle, can be removed to a certain extent by boiling. The alternative diet is open to some objection. It is not often, especially in large towns, that cow's milk can be given pure with safety. The firm clot formed by the coagulated casein of this milk is a serious obstacle to its ready digestion; and even dilution with water, although it reduces the proportion of casein in the mixture, does not affect the density of the mass of curd formed. For this reason few children will be found to thrive upon such a diet. In most cases not only dilution with water, but the addition of an alkali, or of some thickening material, such as weak barley-water, will be necessary in order to prevent the formation of a dense clot in the infant's stomach. The author, indeed, in a note, alludes to the plan of alkalinizing cow's milk, but adds that he does not agree with the practice, and that he prefers to give the milk without any addition.

On the whole the volume is an interesting one, and although it contributes little that is new to our knowledge of infantile malnutrition—indeed originality upon so well-worn a subject could hardly be looked for—it yet presents old facts in a striking light; and, especially with regard to the pathology of the diseased condition, is no doubt a valuable and trustworthy guide. A word of praise must be given to the plates, both plain and coloured, which illustrate the morbid appearance of the tissues to the naked eye and under the microscope. They are numerous and admirably executed.

*Les Causes de la Gravelle, et de la Pierre.* Par le Dr. Debout d'Estrées. Pp. 138. 1876.

In this monograph, special allusion is made to the class of cases visiting the mineral springs of Contrexéville, where its author is in practice; and although the work contributes but little that is new to the pathology of the class of affections of which it treats, it yet contains a *résumé* of many facts which cannot be devoid of interest to our readers, even although they chiefly consist of data collected from the writings of other authors. For example, it seems from an analysis of 1,000 calculi made by Bouchardat, that (in France) the relative proportions of the different kinds of calculi are:

Uric acid, pure, or mixed with urates,	
phosphates, and oxalates ... ..	372
Oxalate of lime alone ... ..	142
Phosphatic calculi ... ..	253
Calculi of alternating layers ... ..	233
	1000

Of 1,028 cases of uric acid calculi, small and large, treated at the mineral springs of Contrexéville, the proportion was in males, 822: in females, 197; in children, 9; total, 1,028. Out of these 1,028 cases it was found that the period of life at which the calculi occurred in the two sexes differed by no less a period than ten years. Thus, while the average age of the females affected was 40, that of the males was found to be 50 years.

The cause of the diathesis was sought to be ascertained in 583 of the foregoing cases, and the result was that

191	were attributed to	Hereditary disposition.
160	"	Disordered digestion.
101	"	Over-feeding.
95	"	Deficient exercise.
35	"	Violent emotions.
1	"	Contusion of the kidneys.

583

Of oxalate of lime calculi some interesting statistics are given. Out of 1,000 calculi analysed by Bouchardat, and 252 by Leroy d'Etiolles, no fewer than 176 were found to be composed of pure oxalate of lime, which is a large proportion, considering that many other calculi possess this ingredient as a nucleus.

The author, while noticing the frequency with which oxalate of lime and uric acid appear simultaneously in the urinary secretion, remarks that their origin in the system is due to very similar causes; the chief of which is diminished oxidation. In the treatment of oxaluria he recommends the employment of the alkaline calcareous mineral waters, which must appear to English physicians very extraordinary, as it is a well known fact amongst us that oxalate of lime calculi are most abundant in the chalk districts of England, where the people are by necessity compelled to drink, and cook their food in, alkaline calcareous waters. And, as is well known to physicians who see many of these cases, a course of mineral acids often puts a check to oxalate of lime deposits in the urine. It must not be overlooked, however, that the advice to give alkaline calcareous mineral water proceeds from a gentleman himself attached to an alkaline calcareous mineral spring.

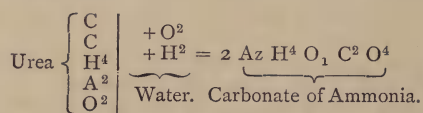
Phosphatic calculi are divided under two heads—



primary and secondary. The former may be said to arise, the author thinks, from an excessive elimination occurring, with only a normal assimilation—as he expresses it, “*Excès de dépenses sur les recettes.*”

The most active agent in the production of this result he believes to be the breathing of a vitiated atmosphere, such as cooks are habituated to who employ charcoal stoves, from which emanate large quantities of carbonic oxide gas. He cites an example in support of this view. Impaired respiratory capacity, as in phthisis, he also looks upon as productive of the phosphatic diathesis by inducing what he calls “*dénutrition.*”

Secondary phosphatic deposit again, he thinks, is due to the cause usually assigned to it in this country, namely, ammoniacal fermentation and decomposition of urea, which we need not dwell upon, as it is fully explained in our best works on the urine. We need only to give the process according to his formula :



The author wisely gives a hint, which is too often neglected by practitioners at mineral water springs, namely, that the injudicious and indiscriminate use of waters such as those of Vichy, Vals, and Carlsbad, do mischief in cases of gravel and stone. This remark may, perhaps, bring to the memory of some of our readers a rather animated discussion which took place on this point in the pages of the LONDON MEDICAL RECORD, in June and July, 1873, and which it would be well for the over zealous advocates for the use of mineral waters in cases of gravel and stone to bear in mind, as they might be enabled thereby to save many of their poor patients from an immense amount of unnecessary misery.

Cystine seems, from the author's observations, to be much rarer in France than in England, for he has only met with two solitary examples of it among all the cases of gravel and stone he has had under treatment.

Carbonate of lime, again, he thinks rarer still, as he has never once met with a single example of it.

Regarding xanthine he makes a similar remark, but that can surprise nobody, as xanthine is scarcely ever met with in any country.

Thus far we have had nothing but agreeable criticism, and most gladly would we have continued it to the end, but it would be a neglect of duty did we not call the author's attention to the latter third of his list of substances forming calculi, as it might be greatly improved on revision. We would specially recommend the omission from the list of the substance urea, seeing that it is such a soluble material in water that never by any chance, normal or pathological, is it met with in a solid state in fresh urine.

After this remark, we shall conclude by saying that we have derived both pleasure and profit in the perusal of the work.

GEORGE HARLEY, M.D.

*Patologia del Simpatico.* Di A. de GIOVANNI, Professore Straordinario di Patologia Generale etc. nell' Università di Pavia. (Pathology of the Sympathetic Nerve. By Dr. A. de Giovanni, Extraordinary Professor of General Pathology in the University of Pavia.) Milano: Editori fratelli Richiedei. 1876.

The subject introduced by Dr. de Giovanni is not only novel, it is opportune. Cerebro-spinal pathology, recently such a favourite study, must sooner or later have found a check to its progress for want of collateral information in the district of the sympathetic. On this ground alone, the book before us is welcome and deserves to be read. In no less a degree is general pathology concerned; many of its most obscure problems are waiting for light to come from the study of the sympathetic. The long neglect from which so important a branch of pathological inquiry has hitherto suffered must be taken as an expression of the unusual difficulties with which it is beset.

These considerations lead one to refer any disappointment that may be experienced less to the book itself than to its title; for, even after registering Professor de Giovanni's results we cannot boast of possessing a “Pathology of the Sympathetic.” In the present state of our knowledge, with a large stock of observations and but a small array of facts, the heading of this treatise appears to express the author's wishes rather than his achievements.

Faithful to his somewhat sanguine conception of the subject, Dr. de Giovanni divides the book according to an ideal system. A brief anatomical account, which does not claim to be more than a sketch, is followed by a chapter on the physiology of the sympathetic. Pathological anatomy occupies 80 pages, and the remaining 220 are devoted to clinical observations.

In the physiological chapter the author insists on the correlations set up by the ganglionic system, for which, according to him, the name “harmonic” would have been the most appropriate. This system, like the cerebro-spinal, has its motility and its sensibility, the latter being but an expression for centripetal unconscious conduction: a stimulus results in painful perceptions only when sufficiently powerful or unusual to irradiate into the cerebro-spinal system. Similarly, the cerebro-spinal motor fibres may be excited in a reflex fashion from a sympathetic impression; or the chain of reflex actions may begin in the cerebro-spinal system and end in the sympathetic. Trophic actions are described as belonging solely to the vaso-motor order. The prevalent histological views on the intracellular terminations of nerve-fibres are not ignored, but rejected as unproved and improbable. The author's exclusiveness on this point deprives him of one means of explaining the intricate problems with which he has to deal.

Despite its relative shortness, the chapter on pathological anatomy forms, in our opinion, the most valuable part of the book. Results of 205 *post mortem* examinations are given. The changes which were found in the sympathetic are each treated of individually, and for each abnormality a short table is given, showing the degree of frequency with which it occurs in various types of disease. It is a matter of regret that these statements should have been so concise, and that no effort should have been made to refer the clinical bearing to the anatomical changes.

The lymphatic infiltrations of the sympathetic ganglia receive a larger share of attention, and some interesting pathological experiments on animals are given. From his observations, Dr. de Giovanni concludes that the sympathetic resents most of the diseases affecting the whole system, and that lymphatic infiltration of its ganglia is the expression of the peculiar influence which it suffers.

The last chapter would have gained by being condensed; although the clinical observations recorded are not devoid of interest, they fail to carry weight from the absence of *post mortem* records. Surmises abound, theories are freely compounded, induction is pushed to a high tension, while facts are few.

It must in justice be added, that the book bears the stamp of earnest work and shrewd observation. The micrographic drawings annexed illustrate successfully the written descriptions. The exposition is throughout clear, and, putting aside the too frequent recurrence of faulty printing, is of pleasant reading. Dr. de Giovanni is among the first pioneers into an unknown territory, and in that respect has deserved well of his profession, although it will appear that this honourable priority has its difficulties and its dangers.

BUSHELL ANNINGSON, M.B.

*The Use of the Membrana Tympani as a Phonautograph and Logograph.* By CLARENCE J. BLAKE, M.D. Boston, U.S.

The science of acoustics has certainly received a valuable acquisition in the ingenious apparatus devised by Dr. Clarence Blake, and described by him in this monograph.

The object of this apparatus is to obtain tracings of sound waves, by means of a vibrating membrane. Bourget, Bernard, Marz, Donders, and others, have hitherto made use of artificial membranes, whereas Dr. Blake adopts the human membrana tympani for this purpose in the following manner.

A fresh temporal bone is taken, the external soft parts cut away almost as far as the membrana tympani itself, and then the anterior and posterior walls of the tympani cavity are carefully removed, so as to expose the ossicles to view. The articulation of the incus and stapes is divided with a knife, and then the petrous bone removed by an antero-posterior section, a fine hair-saw being used, which is passed between the divided articulation of the incus and stapes, great care being taken not to disturb the former or the malleus in the least degree.

Thus the outer wall of the tympanum is obtained with the membrane, malleus, and incus *in situ*. The bone is then firmly fixed on a stand, and a mouth-piece or resonator attached to the external meatus; a delicate style, formed of a single fibre from a wheat straw, is now glued to the long process of the incus or malleus, in their long axis. The opposite end of this style works on the smoked surface of a piece of glass, so as to write off tracings of any vibrations in the membrana tympani and ossicles.

To set this apparatus working, the glass has merely to be set in motion, and the desired sounds produced in the trumpet-shaped resonator, when the resulting vibrations will be written off with great nicety on the smoked surface.

These tracings are necessarily very minute, but at the same time apparently most accurate. Dr. Blake deserves great credit for this ingenious instrument, and the hearty thanks of all those working at or interested in the subject. We look forward to great

results from the experiments with this form of phonautograph, both in the hands of Dr. Blake and of others.

URBAN PRITCHARD, M.D.

## CORRESPONDENCE.

### THE VASCULAR CHANGES IN BRIGHT'S DISEASE.

THE LONDON MEDICAL RECORD for May 15th, 1877 (p. 182), contained a notice by Dr. Robert Saundby, reprinted from the *Edinburgh Medical Journal* for October 1876. Dr. Saundby writes to explain that his views have been somewhat misunderstood. There is, of necessity, a certain parallelism between his theories and those of Dr. George Johnson, the Lumleian lecturer, inasmuch as both have certain common facts as the starting-point of their arguments. But he contends that, so far from being identical with Dr. Johnson's views, his argument differs very widely indeed.

Dr. Johnson places as the first factor in the production of arterial tension, the destruction of renal epithelium, which leads to the retention of urea and other matters in the blood. Dr. Saundby holds that the first factor is a deficient action of urea-forming organs (liver, muscles, etc.), leading to the accumulation of uric acid and other products of tissue-metamorphosis in the blood, whilst the kidneys are still healthy. Dr. Johnson considers the effect of the urea, etc., to be to cause contraction of the minute arterioles throughout the body, thereby causing increased arterial tension, cardiac hypertrophy, etc. Dr. Saundby believes that "*the result of the accumulation of not easily eliminable salts in the blood is to reverse the osmotic currents so as to increase the mass of the blood, and thereby to cause increased arterial tension*", etc. In all that follows from this essential and primary divergence of views, he necessarily differs from Dr. Johnson, only agreeing with him in the use of certain expressions to explain the dilatation and hypertrophy of the heart and vessels with the consequent degenerations. In support of this osmotic mechanism, Dr. Saundby refers to the frequently increased arterial tension in diabetes mellitus; and although Dr. Gowers's observations on the retinal vessels are very much in favour of Dr. Johnson's view, yet he urges that the retinal vessels present extreme variations in health. Dr. Johnson's view fails most in explaining the polyuria: he is compelled to fall back upon "a diuretic action". As the relations between blood-pressure and urinary secretions are tolerably exact (other things being equal), this seems to be a serious fault. Dr. Saundby's theory accounts for it on the principle of simple increased blood-pressure. It will thus be seen that Dr. Saundby's views recognise a change antecedent to the destruction of renal tissue; that he ignores any "stop-cock" action of the arterioles, explaining, as he does, the increased arterial tension by the reversion of osmotic currents from the accumulation of products of tissue-change in the blood.

The reporter begs to express his extreme regret that the last sentence of his abstract in the May number of the LONDON MEDICAL RECORD should have been so worded as to seem to convey a charge of plagiarism, or at least of servile copying, on the part of Dr. Saundby. Nothing could be further from his thoughts than to impute anything of the



kind—which will be seen from the explanation above given to be as ill-founded as it would have been ill-natured. He has privately expressed his regrets to Dr. Saundby, and is much indebted to the editor of the LONDON MEDICAL RECORD for this public opportunity for making the *amende* which is due.

W. BATHURST WOODMAN.

## NEW INVENTIONS.

### LECLANCHÉ MEDICAL BATTERY.

This medical battery, of which we furnish a wood-cut, is that which is recommended by most modern medical electricians, and especially in Dr. Vivian Poore's Text-Book of Electricity in Medicine and Surgery. The medical man will find that he possesses in this battery an instrument which is always ready for use, and in which he can, when at rest, by a very simple mechanical arrangement, prevent any deterioration. It is a handy and a portable instrument, and particularly useful to medical electricians in that it is cleanly, inodorous, and free from the probability of troublesome accidents. The makers guarantee it for two years; and, at the end of that time, will put it again into working order for a very small cost, when it lasts once more as long again. We know of no other battery which possesses so many advantages, and it is exceedingly desirable that an instrument so well calculated to popularise medical electricity amongst the medical profession in general should come into extensive use. Hitherto medical men have been deterred from availing themselves of the therapeutic action of electricity, from the relative difficulty and inconvenience attaching to the instruments ordinarily at their disposal. The best English and foreign authorities unite in giving the preference to the Leclanché battery over those which have been previously in use.

### THE SOMATOSCOPE.

Under the designation of the Somatoscope, Dr. Hüter of Marburg describes and figures an instrument combining a stethoscope, percussion-hammer, and plessimeter in one. His account will be found in the *Berliner Klinische Wochenschrift*, No. 12, 1877 (March 19). He remarks that it is now almost necessary to carry a number of instruments wherever one goes. At the least a thermometer, apparatus for hypodermic injection, stethoscope, and the like, require to be carried about. He has therefore combined three instruments in one in the somatoscope. The handle of the percussion-hammer serves as the lower end and shaft of the stethoscope. The flat or ear end of the stethoscope will screw off, and is made as a plessimeter, the little handles of this being undermost. When this is screwed on, the stethoscope is complete. Those who prefer a concave ear-piece can have this separately, to screw on instead of the plessimeter ending. Those who have accustomed themselves to a plessimeter will doubtless find this combination an useful one. In England, however, the use of the fingers in percussion instead of plessimeter and hammer appears to be extending. They form a portion of the medical armamentarium which is always handy, and not so likely to be lost as the ivory plessimeter and hammer.

### SELLERS' MISTURA BISMUTHI CHLORIDI,

Of which a sample has been brought under our notice, is a very useful stomachic and antidyspeptic preparation, which furnishes in a convenient and agreeable form a very effective mixture, containing, for each dose, one drop of liquor bismuthi, fifteen drops of chloric ether, eight drops of tincture of nux vomica, two drops of dilute hydrocyanic acid (British Pharmacopœa), and the twenty-fourth of a grain of chloride of morphia. It is a clear, pleasing mixture, perfectly miscible with water in all proportions without precipitation. It is prepared by J. Sellers, of Mackay, Sellers, and Co., manufacturing chemists, Bouverie-street, London.

### CARBOLISED CAMPHOR OF MESSRS. FERRIS AND CO.

We have used this preparation in the treatment of chronic unhealthy and foul ulcerations of the lower extremities with marked benefit, following the formula of Dr. Soulez, who first called attention to its therapeutic value. We, therefore, can confidently recommend this combination to the notice of the profession. One part of carbolised camphor to twenty of olive oil is sufficiently powerful to secure all its antiseptic properties.

### RECENT FRENCH BOOKS.

*Published by Delachaye et Cie.*

- La Spermatorrhée, par le docteur Pouillet. 1 vol. in-18. Prix : 3 fr. 50.  
Recherches sur l'emploi du sexquibromure de fer contre la spermatorrhée, par le docteur Hequet. In-12. Prix : 2 fr.  
Résumé de pathologie et de clinique chirurgicales, livre à l'usage des examens et des concours, par M. le docteur Fort. 1 vol. de 520 pages avec 107 figures. Prix : 5 fr.  
Leçons de thérapeutique faites à la Faculté de médecine de Paris par A. Gubler; recueillies et publiées par le docteur Leblanc. 1 vol. in-8. Prix : 10 fr.

*Published by H. Lauwereyns.*

- Le spondylisme ou affaïssement vertébral, suite du mal vertébral de Pott (cause nouvelle d'altération pelvienne) comparé à la spondylolisthésis ou glissement vertébral, par J. F. Hergott. 2 fr. 50.  
Considérations sur l'oxythérapie et l'azothérapie, par le docteur Tamin-Despallès.

*Published by Germer Baillière.*

- Dictionnaire annuel des progrès des sciences et institutions médicales, suite et complément de tous les dictionnaires, par M. P. Garnier, 12e année, 1876. 1 vol. in-12 de 550 pages. 7 fr.  
Des sondes à demeure et du conducteur en baleine, par le docteur Amussat. In-8, avec 17 figures dans le texte. 2 fr.

*Published by Octave Doin.*

- La Santé de l'Enfant, guide pratique de la mère de famille; par le docteur Godleski. 1 vol. in-12 de 215 pages. Prix : 2 fr. 50.  
Maladies du Système nerveux, leçons professées à la Faculté de Médecine, en 1875, par A. Vulpian. Recueillies et publiées par M. le docteur Bourceret, ancien interne des hôpitaux, et revues par l'auteur. Première livraison: Résumé du Cours de 1876. Compression de la moelle. Mal de Pott. Les livraisons paraîtront le 1 et 15 de chaque mois. Prix de chaque livraison : 1 fr.  
Traité des maladies des yeux, par le docteur Ch. Abadie. 2 vol. in-8 de 500 pages chacun, avec 134 figures dans le texte. Prix : 20 fr.

*Published by G. Masson,*

- Recherches sur les mouvements du cerveau et sur le mécanisme de la circulation des centres nerveux, par le docteur A. Salathé. In-8 de 144 pages, avec 29 figures dans le texte. 4 fr.  
L'Alimentation artificielle et le biberon, par Mme. Madeleine Brès, docteur en médecine de la Faculté de Paris. In-8 de 77 pages. 3 fr.

*Published by J. B. Baillière et Fils.*

- Les eaux minérales du Mont-Dore (topographie, propriétés physiques et chimiques, clinique médicale), par le docteur Boudant.  
Traité des maladies de la prostate, par le docteur H. Picard, Paris, 1877. 9 vol. in-8, 400 pages, avec 83 figures. 8 fr.

*Published by J. P. Mègret.*

- Du traitement des hémorrhoides par la dilatation forcée des sphincters de l'anus, par le docteur J. Fontan. 3 fr.  
Thérapeutique de l'inhalation d'Allevard. Considérations générales. Laryngite, bronchite, asthme. Par le docteur Baron. Brochure in-8. 1 fr.

## PARIS GRADUATION THESES.

(May 14 to 19, 1877.)

- Engel (Théodore-François-Joseph). De la syncope d'origine traumatique. In-8 de 60 pages.
- Liron (Alfred). Essai sur la chéloïde inguinale spontanée.
- Cayron (Urbain). Sur quelques modifications dans l'appareil respiratoire consécutives à la pleurésie aiguë.
- Ravazé (Arthur). Etude sur l'étiologie de l'embolie pulmonaire.
- Girard (Edouard). De la cystite pseudo-membraneuse. In-8 de 72 pages.
- Cusset (Jean). Etude sur l'appareil branchial des vertébrés et quelques affections qui en dérivent chez l'homme. (Fistules branchiales, kystes branchiaux, kystes dermoïdes).
- Peltier (Henri). Des accidents consécutifs à l'emploi de l'atropine dans le traitement des affections oculaires.
- Euthyboule (Démétrius). Etude sur le traitement du cancroïde par le chlorate de potasse.
- Bara (François-Oscar). Contribution à l'étude de la coqueluche.
- Chauvet (Charles). Du danger des médicaments actifs dans les cas de lésions rénales.
- Folloppe (Charles-Louis-Constant). Contribution au diagnostic des tumeurs liquides de la fosse iliaque.
- Godin (Adrien). Essai sur l'ulcère de l'estomac.
- Vacher (Louis). De la voix chez l'homme au point de vue de sa formation, de son étendue et de ses registres.
- Bouchain (Léon). De l'otite sèche.
- Donnay (Emile). De l'hématocèle de la tunique vaginale et de ses complications à la suite des ponctions exploratrices.
- Gidon (Joseph). Des complications des otites suppurées.

## MISCELLANY.

THE ROYAL SOCIETY.—The following gentlemen connected with medicine and the allied sciences were on the 7th inst. elected Fellows of the Royal Society:—Professor James Dewar, Jacksonian Professor of Natural Philosophy at Cambridge, proposed for election in consideration of his experimental work; Sir Joseph Fayrer, K.C.S.I., honorary physician to the Queen, President of the Indian Medical Board, late President of the Asiatic Society of Bengal; Thomas Richard Fraser, M.D., Examiner in *Materia Medica* in the University of Edinburgh, distinguished for his researches on the physiological action of drugs; W. Carmichael McIntosh, M.D. (Edin.), distinguished by his researches on the annelida; Robert McLachlan, distinguished as an entomologist; John William Mallet, distinguished as a chemical and physical experimenter, the first who succeeded in fusing into a solid mass metallic arsenic under pressure of its own vapour; Henry Nottidge Moseley, Fellow of Exeter College, Radcliffe Travelling Fellow, and one of the civilian staff of Her Majesty's ship *Challenger*; William Roberts, M.D., Physician to the Manchester Infirmary, distinguished for his researches in histology, physiology, and pathological chemistry; Dr. William Turner, Professor of Anatomy, University of Edinburgh.

PUTREFACTIVE ORGANISMS.—The last Friday evening lecture at the Royal Institution for the season was delivered by Professor Tyndall on June 8, the subject being, "Putrefactive and infective organisms from a physical point of view." The lecture was a *resumé* of a series of investigations carried on at the Royal Institution and at Kew since the autumn of last year. In conclusion, he expressed his opinion that there was not a shadow of evidence in favour of the doctrine of spontaneous generation.

THE FRENCH SALON.—Amongst the pictures in the Salon of 1877 will be found portraits of Dr. Vidal, M. Constantine Paul, and Professor Depaul, of varying degrees of merit. M. Maillart has sent a bronze bust of M. Paul Dubois, which is not thought to be a good likeness. M. Jouandot has been more fortunate in a similar work, representing Dr. Emil Dubois. M. Schroeder has not been particularly happy in reproducing a likeness in his bust of the late M. Andral. Busts of Labitte, and of the late Professors Dolbeau, and Béhier, accurately represent the features and expressions of the originals.

CHINESE TREATMENT OF PLAGUE.—Mr. A. Davenport, in his account of the recent Yunnan mission, states that the ancient city of Yunnan-fu and also Ta-li-fu have

also, since the Tai-ping rebellion and invasion, been cursed with an endemic disease resembling the plague. It is called the symptom disease, in consequence of the critical enlargements of the lymphatic glands in the armpits. Sometimes it attacks one side only of a street. It first kills animals, and then the population, if they have not profited by that warning. The treatment consists in supplying the patient with a jar full of water to drink, and leaving him quiet in his state of stupor, only rousing him once a day by poking him with a long pole through the window. But, notwithstanding "treatment," the people say that this and other similar novel diseases have caused as great a loss of life as the rebellion itself.

THE vapour of chloral hydrate is a solvent of cellulose. Corks of bottles containing the crystals have been found eaten away to the depth of a quarter of an inch, the cork being resolved into a black semi-liquid. Certain kinds of tissue-paper are partially dissolved in time, if thrown into a bottle containing the crystals.

THE CONSUMPTION OF WATERCRESS IN PARIS.—It is well known that this wholesome vegetable is very largely consumed in Paris, where it is extensively used as an adjunct to many *plats*, and not, as in this country, chiefly in its uncooked state as an accompaniment to the matutinal ham and eggs. Recent statistics (for in France everything is a matter of statistics) tell us that no less than thirty waggon-loads of watercresses, each worth £12 sterling, daily pass the barriers of Paris, making the daily expenditure of the capital for this esculent, £360 sterling.

SEAMEN'S REMEDY AGAINST SEASICKNESS.—Professor Xavier Landerer, of Athens, says that a very popular remedy against this ailment, in common use among mariners in the Levant, is the daily internal use of iron. This is obtained in a very primitive way—a portion of the iron-rust adhering to the anchor and anchor-chain is scraped off and administered. At the same time, a small pouch containing roasted salt and flowers of thyme is tied upon the region of the navel as firmly as can be borne. This is said to lessen and gradually to subdue the antiperistaltic motions of the stomach, caused by the rolling of the vessel. This preparation was already known to the ancient Greeks as "thymian salt." M. Landerer says that he knows several seamen who have been cured by this treatment.

FORCED FEEDING OF THE INSANE.—The *Gazette de Santé* (No. 50, 1787), notes that the Paris School of Surgery was then occupying itself with a very interesting subject—the forcible feeding of insane patients who had made up their minds to kill themselves by abstaining from food. Litré had already invented several methods for introducing liquids into the œsophagus by the nostrils, but, in consequence of the imperfectness of his method, obtained but very little success. Libouton, a surgeon of Arras, was more successful in the expedient of introducing a cannula by the nostrils into the œsophagus, and injecting the liquid into this cannula with a little syringe. At a later period, this method was perfected by Desault.

WORKING MEN AND SCIENCE.—The members of the working men's clubs, under the auspices of the Working Men's Club Union, recently paid a visit, by permission of the Royal College of Surgeons, to the museum founded by John Hunter, and attached to the building of the college in Lincoln's Inn Fields. Professor Flower, the curator, received the visitors, who were conducted into the first great hall, where he gave a general description of the museum. The visitors manifested great interest in the collection and in Mr. Flower's descriptions, and at the conclusion of the visit one of the party, on behalf of his comrades, returned hearty thanks to the professor and to the council of the College for the treat which had been afforded to them, and said it was altogether a mistake to suppose that the working men took no interest in science. Mr. Flower said it afforded him much pleasure to show the museum, and especially so when he found his labours thus appreciated.



**MONADS.**—At the Friday evening discourse at the Royal Institution on May 4, the Rev. W. H. Dallinger gave the results of his observations made during the last six years with high microscopic power on monads. Ten years ago, he saw the need of such work in its bearing on the questions of spontaneous generation. No life-history of any of these minute forms of life had been worked out; the experiments conducted by those who wrote on the subject relied on high temperatures to destroy organisms in the fluids they examined. After four years spent in preparation, he commenced his work in conjunction with Dr. Drysdale, the plan needing two observers. A characteristic feature of the work was that each set of observations should be made absolutely continuously, so that nothing should have to be inferred. An arrangement was made by which the little drop of septic fluid containing the objects under examination should be free from evaporation, and very high powers were employed. The largest adult objects included in the examination were the one-thousandth of an inch, the smallest adults were the four-thousandth. Six forms altogether were selected, and, by long, patient, and unbroken watching, their whole history was worked out. While reproduction by fission seemed at first to the observers to be the usual method, prolonged research made known that spores were produced. These were so small that a magnifying power of 5,000 diameters was needed to see them as they began to grow. The glairy fluid from which they developed seemed at first homogeneous, and it was only when growth set in the spores became visible. All that could be learnt about the origin of the glairy fluid was that a monad, larger than usual, and with a granulated aspect towards the flagellate end, would seize on one in the ordinary condition. The two would swim about together till the larger absorbed the smaller, and the two were fused together. A motionless spheroidal glossy speck was then all that could be seen. This speck was found to be a sac, and after remaining still for from 10 to 36 hours it burst, and the glairy homogenous fluid flowed out. The young spores that came into view in this were watched through to the adult condition. Bearing on the subject of spontaneous generation, this fact was learnt, that while a temperature of 140 deg. F. was sufficient to cause the death of adults, the spores were able to grow even after having been heated to 300 deg. F. for 10 minutes. Can it be philosophical, Mr. Dallinger asked, with the life-history of bacterium still unknown, to assume it has a different method of propagation? Some experiments based on Professor Tyndall's use of the electric beam to test topically pure air were made. The remains of infusions known to contain certain spores were diffused through glass tubes, in which were placed vessels with fluid. Adult monads always appeared in the fluids, but when after the air in the tubes had been allowed to purify itself by settlement, fresh fluids were introduced, no monads appeared. That there is no such thing as spontaneous generation of monads seems quite clear, and when bacteria are in like manner studied, there can be hardly a doubt the same law will be found to hold good with them.

**MARSH POISON.**—Signori Lanzi and Terrigi (*Monthly Microscopical Journal*) have discovered minute dark granules belonging to Cohn's group of pigmented sphaerobacteria within the endochrome of algæ, which increase in number with decay of the latter. These granules yield on cultivation the *Monilia penicillata* of Fries, and are identical with the pigment granules of the liver, spleen, and blood of those who have suffered from malarial diseases. Lanzi has even obtained a *Zoogloea* by cultivation of these granules from a human liver. On the evaporation of the marshy pools of the Campagna in summer, great sheets of decomposing algæ are exposed to the air, the sphaerobacteria abound, and are found floating in vast numbers in the atmosphere to the height of fifty centimeters above the level of the marsh. These results agree closely with those described by Dr. Salisbury in the *American Journal of Medical Science* in 1866.

**HEREDITARY QUALITIES.**—On Friday evening, Feb. 9th, Mr. F. Galton, F.R.S., gave a discourse at the Royal

institution on "Typical Laws of Heredity". The lecturer said that, although superficial observations on the height, colour, and other characteristics of a people may give the impression that such variations are a matter of chance, yet it is found, on careful examination, that, statistically considered, each generation bears a close resemblance to its predecessor, except in cases where the processes of hereditary transmission have been disturbed by changes in the general conditions of life. This seems the more remarkable, when it is recollected that different classes of persons do not leave the same proportions of representatives behind them. Giants leave but few children; a proportion of these tend to revert to the normal size; and those that are of remarkable size are less likely to live and perpetuate the peculiarity of size. Yet not only the numerical proportion of giants in each generation is the same, but also, taking one hundred of the tallest men of any generation, they will present just the same varieties of stature as the one hundred tallest men of the preceding one. We are indebted to the observations and calculations of Quetelet for the establishment of the fact that the deviations in height, etc., of every race, conform in amount and frequency to the mathematical law of deviation. Statistical tables of stature, strength, etc., based on certain numbers of people of different countries, showed practically a very close conformity with this mathematical law. Taking a supposed typical case, in which the conformity was exact, Mr. Galton had worked out the laws of heredity that would then insure statistical resemblances in consecutive generations. He had experimented with successive generations of peas, grouping the results according to the weights of the peas, and regarding also the dimensions of the plant. Different sets of peas were grown in different localities. The subject was illustrated by models. The simplest model may be described in this way. A frame, two feet high, eighteen inches wide, and an inch and a half deep, has a front of glass. The bottom portion of the case is divided in a single row into a number of compartments by little divisions running from the back to the glass front. All are of the same height, about four inches. Above these are several rows of pins projecting from the back to the glass front. The rows are arranged so that the gaps of one row correspond in place with pins in another. Above these is another series of divisions corresponding in number with the bottom series, and below each is a "shoot" or sloping tube, all of which converge to a central point. The top series of divisions is charged with pellets, shot, or small round seeds, each division having a sliding stop at its lower end. The stops are drawn in succession, and the contents of each division as liberated rattle down, striking the projecting pins, and, thus being scattered, fall into the divisions beneath. When all the contents have been thus liberated, it is found that a line drawn along the surfaces of the heaps of pellets in the lower divisions forms a curve, highest in the centre, and sloping down on both sides. Frequent repetition of the experiment produces the same curve. Whether the upper divisions are filled to all the same height, or whether they are so filled that a line drawn along the surfaces makes a curve, the result is the same. In this way the results of the processes of reversion and family variability were shown, the curve giving the degree of variation from the normal standard. The laws of productiveness and natural selection were explained with similar illustrations. The effects of these, together with that of dual parentage, help reversion in checking the step by step progress of dispersion in the race caused by family variabilities. It was shown that natural selection does not act by carving out each new generation to a definite pattern, irrespectively of waste, but acts in strict conformity with the law of deviation. Individuals which deviate widely from a mean type, either in excess or deficiency, make but a small contribution to succeeding generations. The genealogical progress of a race was shown to consist in a constant outgrowth from its type-centre and a constant dying away at the margins; and there is a tendency in the scanty remnants of all extraordinary exceptions to revert to the original type from which the race has sprung.

# The London Medical Record.

## QUALITATIVE AND QUANTITATIVE EXAMINATION OF THE MOST IMPORTANT BATHS WHICH HAVE A STIMULATING ACTION ON THE SKIN.\*

BY DR. J. JACOB, Bath-Physician at Cudowa, Silesia.

IT would be an undoubted mistake to consider stimulation to be the only mode by which stimulating baths act on the system. At the same time, it is the point which can at present be most easily relied on for the explanation of their action, and therefore deserves our fullest attention. I propose in the first place to study exhaustively their action physically and functionally, and afterwards to inquire into the organico-chemical processes which they originate.

Having last year established the fact of the skin-exciting qualities of the mud-bath, I was anxious to inquire next, how far these qualities were dependent on the chemical matters present in the bath. For purposes of comparison, I selected a bath of bran, and compared the action of the two on the axillæ and on the tips of the fingers.

The result of this comparison is the indubitable proof that mud and bran baths of the same consistency produce the same alterations in the circulation, which are to be regarded as the real expression of the amount of stimulation of the skin. The slight differences in the quantitative expression of the amount of determination to the skin, which was sometimes in favour of the mud-bath, can be explained partly by differences in the excitability of the individuals experimented on; partly by the less consistency of the bran-bath.

Lest some might say that the Cudowa mud-baths were not so stimulating as others, I have employed Franzenbad mud-baths also, and have obtained the same results.

The method which I employed last year to determine the degree of stimulation of the skin was this; the axillæ were cooled down to the same degree in a mud-bath, and in a water-bath of the same temperature; and then the difference in the temperature of the tips of the fingers was observed, from which the degree of exciting action on the skin was inferred. In these experiments the axillæ in the water-bath were in much shorter time brought to the temperature of the axillæ in the mud-bath, and the tips of the fingers were brought to a temperature several degrees lower than in the mud-bath; consequently an equally great and a greater amount of heat was in a shorter time taken away from the body in the water than in the mud-bath, and thus the degree of the cooling of the skin was to the disadvantage of the water-bath. To remove from the body in the same time about the same amount of heat, I had ascertained formerly that the water-bath must be 3.6 degrees warmer than the mud-bath, as it was established that the temperature of a mud-bath, which was to leave the heat of the body unaltered,

must be 2.6 to 3.6 degrees lower than that of a water-bath, which shall have the same effect upon the preservation of the heat of the bather.

If, therefore, the water-bath were made some degrees hotter than the mud-bath with which it was compared, the heat of the skin in the water-bath and in the mud-bath must nearly be the same, and the stimulation of the skin was to be judged of by the lower temperature of the axillæ; thus the proceeding was reversed.

Observation proved that the temperature of the axillæ did not fall so much in the water as in the mud-bath, although the fingers were usually cooled more in the water than in the mud or bran-bath. It is therefore proved that the mud or bran-bath causes powerful determination to the skin. As I had formerly studied the skin-exciting effects of carbonic acid baths only, I now resolved to proceed for purposes of comparison to examine that of salt-baths.

My former experiments showed that the determination to the skin which is caused by carbonic acid baths is less perceptible the nearer the surface the layer of the body, the temperature of which is examined, lies; and that the determination to the tips of the fingers during the bath cannot be made out with the thermometer, because the heat is carried off much faster by the gas which is constantly being evolved, than it is brought to the system through the vessels of the skin. In accordance with this experiment, the expression of the degree of stimulation of the skin must be very different in the present instance from what it was in the former one, when the portions of the body examined were much less superficial.

While on the former occasion the peripheral temperature first sank in the bath, and then rose in a marked manner, and thus showed the stimulation of the skin, on this occasion the determination of blood to the skin in the carbonic acid bath was directly marked by the peripheral temperature, *i.e.*, of the finger-tips, remaining constant for about a full minute.

As on this occasion the baths were not nearly so cold as on the former one, and thus the force of the abstraction of heat, which diminishes the cutaneous circulation and its expression, was much less, the temperature of the axillæ only rose a very little, or not at all, at the commencement of the bath, before the stimulation of the skin began, but remained constant for only a very short time, and afterwards fell when the stimulation of the skin began, and this it did the more the less the stimulation was limited by the cold.

It cannot be denied that the notion thus got of the determination to the skin, is less distinct than that which was formerly obtained when the temperature of the subcutaneous layers was ascertained: still it seemed necessary for me to confirm my earlier results by a new mode of experiment. Besides, it had been found satisfactory with the mud-baths, and it was not desirable to multiply the experiments; it was therefore adhered to in the quantitative comparison of the skin-stimulation of the carbonic acid and salt with the mud-baths.

The 5 per cent. salt-baths (and this strength is the usual one and sufficient for ordinary therapeutic purposes) produced on the whole the same phenomena of skin-stimulation as the carbonic acid baths; only the determination to the skin was still less evidenced, inasmuch as during the first 10 to 15 minutes of the bath, constancy of the temperature of the tips of the fingers was never observed; indeed, there was a

\* *Berliner Klinische Wochenschrift*, 16 April, 1877.



slight depression of it. On the other hand, it was as clearly evidenced by the energetic and rapid depression of the temperature of the axillæ.

It is a peculiarity of both baths that they produce the greatest amount of skin-stimulation during the first 15 minutes. In this time the temperature of the axillæ falls as much as, and even more than, in the next 45 minutes of a bath of one hour of the temperature of  $91.4^{\circ}$ . Only the carbonic acid bath shows this peculiarity in a much more marked way than the salt one. This circumstance offers an explanation of the established practice of making a carbonic acid bath last only from 10 to 20 minutes, while a salt one is made to last from 15 to 30. For, if our object be to produce active stimulation of the skin, it is right to cut short a particular bath when the skin-stimulation has reached its maximum, and not to partially neutralise the effect that has been produced, which would be the result of the water as it cools, naturally diminishing the circulation of the skin.

The mud and bran-baths, especially when the latter is of the same consistence as the former, differ very materially in their skin-stimulating propensities from the gas and salt-baths. The temperature of the fingers falls in the first 10 minutes of the mud-bath of a heat of  $89^{\circ}$  about  $1.7$  degree, and then rises as much, or somewhat more, in the next 35 minutes, after which it again slowly falls. In correspondence with this, the temperature in the axillæ falls very little in the first 10 minutes. It reaches in 35 minutes the greatest depression of temperature caused by the bath, and during the remaining 15 minutes of a one hour bath it scarcely falls at all.

Although our experiments have shown that mud and bran-baths are nearly identical in their power of stimulating the skin, still little is known of the physical conditions which give rise to that stimulation.

The semi-consistent fluid of a mud-bath is, as we know, a bad conductor of heat. Any source of heat, for instance the human body, warms it tolerably fast, so far as it is in direct contact with it, although the more distant layers maintain their own temperature for a long time. Thus the difference of temperature between the temperature of the skin and the surrounding layer of fluid diminishes very quickly. It follows that the at first tolerably rapid loss of temperature of the skin must soon diminish considerably, indeed must cease, and the vessels of the skin, which have been contracted by the loss of heat, must expand again. The blood now circulating in greater quantity in the skin must give off a considerable amount of heat to it, and by this loss being cooled down more than before, returns to the interior and cools it down to an amount corresponding with that of the heat which has been given off to the skin. This explains the difference in the stimulation of the skin by the mud and bran-baths, and by the gas and salt ones.

While in the case of the latter the temperature of the fingers falls only slowly at the time of the greatest stimulation of the skin, the same rises in mud and bran-baths at the time of determination to the skin. This might be attributed to higher power of skin-stimulation on the part of the mud-baths; but as this, as we shall afterwards see, is impossible, so it is beyond doubt that the conservation of the heat which has been required to determine blood to the skin produces the increase of temperature in the fingers peculiar to the mud-baths, while the quick diminution of the loss of temperature of the skin taking place simultaneously, offers the only intel-

ligible explanation of the dilatation of the vessels of the skin in bran and mud-baths which succeeds their contraction.

There are, therefore, two reasons—both the observed behaviour of the mud-bath of which the layer next the skin is, after the usual length of bath, only a few tenths of a degree cooler than the skin which was much warmer than it at the commencement, and also the depression of temperature in the fingers—which oblige us to regard the diminution of the loss of heat as the cause of the simultaneous determination to the skin.

The latter fact I have proved by experiments not open to objection. Raising the temperature of the air a few degrees, or that of the water-bath the fifth of a degree, and enveloping the naked body in woollen clothing, produce at once the increase of temperature in the fingers, with simultaneous depression of it in the axillæ, which is observed in mud-baths.

Physiology had indeed long ago taught us that changes of temperature excite the nerves, and we know that stimulation of the nerves of the skin causes determination of blood to it.

The skin-stimulation caused by the bran-bath is therefore a thermal one, that by the mud-bath the same, at least mainly so. Whether the chemical constitution of the latter has any, and what operation, remains to be determined by other observations.

The Priessnitz' cold fomentings and wrappings are closely akin to the mud-bath, which is cooler than the skin; more so than mud and bran-baths of the temperature of the skin are to warm mud-poultices. The application of heat is only a more powerful stimulation than the diminution of the loss of heat that is taking place.

If I resist the temptation to enter into a longer explanation of the stimulus of which I have been speaking, it is because I wish now to give a numerical expression to the quantitative comparison of the skin-stimulating baths.

The temperature of the axillæ stands lowest in the carbonic acid-bath; that in the five per cent. salt-bath is about  $0.55^{\circ}$  higher; that in the bran- or mud-bath exceeds that of the salt-bath again by  $0.55^{\circ}$ ; and that of the water-bath the heat of the mud- or bran-bath by about  $0.38^{\circ}$  to  $0.55^{\circ}$ , while the difference in the temperature of the fingers is not worth taking into account, and the condition of equal temperature is to be considered as fulfilled.

Consequently, if we fix on the difference of temperature of the axillæ in the mud- or bran-bath and that of the water-bath as the index of the skin-stimulation, then the 5 per cent. salt-bath exceeds the mud-bath twice in stimulating power, and the carbonic acid exceeds that of the mud-bath thrice; that is, so far as stimulation of the skin is indicated by determination to the skin.

It would be worth while to inquire whether a 10 per cent. salt-bath has proportionately increased stimulating properties. Meantime, I doubt whether a 10 per cent. bath would equal the carbonic acid bath in power, because even a diluted gas-bath produces a distinct redness of the skin, which is not observed with the 5 per cent. salt-bath.

A fundamental difference in the strength of the two is also found in this, that in the carbonic acid bath a lower temperature contains more gas, and has therefore more strength, whereas a salt-bath with diminishing temperature undoubtedly acts with less energy, and low temperatures are those most

desired for anti-inflammatory and also for tonic treatment. A quantitative difference in the operation of these kinds of baths is also to be found in their further action, which has as yet been mainly observed in the reflex excitement of the whole nervous and vascular system, which sets in when a certain point in the application of each particular kind of bath has been exceeded. I have been able to observe with certainty this effect from all three kinds of baths, inasmuch as I have witnessed redness of the face, symptoms of congestion of various organs, especially of the brain, and increase of inflammatory action in internal organs; increase of frequency and of hardness of the pulse; in short, acceleration of the whole circulation, palpitations, twitchings of the muscles, sleeplessness, and symptoms of nervous excitement.

This general excitement was most easily induced by carbonic acid baths; partly, no doubt, from their more energetic action on the skin, and partly, doubtless, owing to the amount of gas introduced into the blood through the medium of the lungs.

If the inhalation of carbonic acid could be entirely prevented, its baths might be used much more generally than they are now. From the facility with which they produce these secondary effects, we draw the practical conclusion that they ought chiefly to be employed to stimulate depressed vitality; salt and mud-baths, on the other hand, to cure internal congestions which have been preceded by active hyperæmia.

However, it is self-apparent that these after-effects may be in a great degree avoided by careful and graduated employment of them. We must not, therefore, renounce their vivifying and antiparalytic action, when we have to do with *tabes dorsalis* of a hyperæmic character. For purely inflammatory affections of the spinal column with hyperæmia, salt or mud-baths are undoubtedly to be preferred, or the combination of carbonic acid with mud.

I have still a few remarks to make, which do not immediately concern the stimulation of the skin. A one hour's water-bath of the temperature of  $91.4^{\circ}$  lowers the temperature of the axillæ about  $9^{\circ}$ , the mud-bath of  $89^{\circ}$  about  $1.5^{\circ}$ , the salt bath of  $91.4^{\circ}$  about  $2^{\circ}$ , the carbonic acid bath about  $2.6^{\circ}$ .

The water-bath, therefore, does not cool down the interior of the body, certainly not under the lowest minimum of a healthy man. The carbonic acid brings the temperature about  $9^{\circ}$  under the day's minimum, while the mud-bath of  $89^{\circ}$  and the salt-bath of  $91.4^{\circ}$  bring the temperature of the axillæ nearly to the minimum. This is of practical importance, in so far as the excitability of the whole nervous and circulating system rises and falls with the temperature. The more stimulating, therefore, a bath approaching an indifferent temperature is, so much warmer can it be taken, without exciting the whole nervous and circulating system by increasing the temperature of the interior of the body.

After baths of  $91.4^{\circ}$ , no sinking of the temperature of the axillæ takes place; there rather follows a gradual rise, with a simultaneous depression of the temperature of the skin. This rise takes place more energetically the lower the axillæ have been cooled down by the bath, *i.e.*, the more stimulating to the skin the preceding bath was, or the greater was the loss of heat after the bath from the skin after a determination of blood to it.

Lukewarm baths are the reverse of cool baths of  $62^{\circ}$  to  $75^{\circ}$ , in which the temperature of the axillæ usually sinks after the bath, and indeed more than

in the bath, and the temperature of the periphery does not sink, or scarcely sinks, *i.e.*, is under the influence of the determination to the skin.

After a lukewarm bath, again, air of the temperature of  $68^{\circ}$  causes more cooling of the skin than the bath does; and this by the evaporation of any water that has been absorbed by the skin, or lies on its surface, and by the consequent contraction of the capillaries.

The same phenomenon also presents itself as the second stage after cool baths, but in this case results from exhaustion of heat-production, and thus serves as a regulator for establishing the balance between the giving out of heat and its diminished production; while the same process after the lukewarm bath diminishes the loss of heat caused by evaporation, and thus restores the balance of heat. That evaporation is the cause of the contraction of the capillaries of the skin, is proved by the fact that the contraction is the greater, the less the skin is dried or guarded from evaporation by wrappers.

When the evaporation of the water which remains in the skin, in spite of drying, is finished, then the second stage after the lukewarm bath commences, which consists in a dilatation of the skin capillaries under the influence of diminished loss of heat and in sinking of the temperature of the axillæ with marked rising of the temperature of the skin. This process is the more energetic the more stimulating to the skin the preceding bath has been.

If, then, chiefly in consequence of this not very palpable mode of observation, the stimulation of the skin, after a lukewarm bath, is less marked than after a cool one, still it is undoubtedly present. Also after the bath, the temperature of the axillæ sinks lower in the case of a skin-stimulating bath than after an indifferent one, although the temperature of the skin is nearly the same in either case. The stage of a lukewarm indifferent bath, when the vessels of the skin are contracted, and there is a simultaneous rise or remaining stationary of the temperature of the interior, lasts for the first 25 to 30 minutes of the bath; and thereafter there commences a remarkable sinking of the temperature of the axillæ, with diminished fall of the temperature of the skin; in short, a remission of the contraction of the cutaneous vessels.

When we consider this, and, further, that by careful drying of the skin and use of clothes, the state of contraction which follows a lukewarm indifferent bath may be in a great degree warded off, we obtain the practical rule for affections, which are accompanied with internal hyperæmia, and yet in which lukewarm indifferent baths are indicated; namely, that the bath should last longer than half-an-hour, or for 45 minutes or more, and that, after the bath, care should be taken by carefully drying the skin, and enveloping the patient in cloths, to guard against cold from evaporation. This last precaution also applies to skin-stimulating baths of similar temperature.

From what we have said, we can now see why indifferent baths of indifferent temperature give bad results in *tabes*, while stimulating baths of the same temperature are employed with advantage.

*Tabes* is more or less an inflammatory hyperæmic condition of the spinal cord. Thus temporary conditions of congestion or of elevation of temperature artificially induced in this very sensitive portion of the system, may very easily prove injurious, especially when the after-effects of lukewarm baths are not sufficiently guarded against.

On the other hand, a cooling of the spinal cord



and diminution of its congestion, such as is produced by lukewarm stimulating baths, can, by increasing the activity of the nervous system, and by its action in regenerating the nervous tissues, contribute to lessen, or even to stay, the morbid action which is at the root of tabes.

J. MACPHERSON, M.D.

## CHARCOT AND PITRES ON CEREBRAL LOCALISATION.

(Concluded from page 219.)

ODIER'S case is that of a young soldier who received a sabre-wound in the left parietal region, from the effects of which he apparently recovered, but who, twenty years after, began to suffer from convulsive spasms, beginning in the little finger of the right hand. These increased in frequency and intensity, and developed into unilateral convulsions, with loss of consciousness. The attacks could be stopped at first by tightening a ligature round the arm; but later, after a debauch, the ligature failed to have an inhibitory influence. The right side ultimately became partially paralysed. After death, corresponding to the wound on the left parietal bone, a fungous tumour of the size of a large apple was found beneath the dura mater, pressing on the brain in the direction of the left lateral ventricle. The right lateral ventricle was distended. The other parts of the brain were normal.

A case reported by Charcot and Ball, and referred to by Brown-Séquard, illustrates the commencement of a fit in the muscles of the face. The fit began with a numbness in the left side of the face and spasm of the upper lip. The attack could be arrested by pinching or slapping the parts where the aura originated. After death two large tumours were found in the dura mater, the one pressing on the convolutions, immediately posterior to the fissure of Sylvius in the right hemisphere, the other appearing in the internal surface of the posterior extremity of the occipital lobe, which it displaced.

In a case reported by M. Lépine, the convulsions were arrested by compression of the carotids. This was a case of right hemiplegia in which, five months after the attack, convulsions began to manifest themselves, beginning in the face. These convulsions were arrested by compression of one or other of the carotids, but recommenced on cessation of the pressure. After death a focus of yellow softening was found in the ascending parietal convolution close to the longitudinal fissure.

The existence of partial epilepsy, especially when it is associated with paralytic symptoms, points almost certainly to a lesion of the cortical motor zone or its immediate vicinity. But it proves nothing as to the nature of the lesion. All that is necessary is that the lesion should cause prolonged irritation. This may be caused by diverse pathological conditions, such as lesions of the meninges, the grey matter, or the subjacent medullary fibres. Various examples are given of epilepsy caused by such different pathological conditions. One is from Cruveilhier, in which, after an attack of left hemiplegia, partial epilepsy occurred in the paralysed side. After death, a tumour of the size of a nut was found pressing on the cortex "at the junction of the exterior with the middle convolutions."

Another is detailed of permanent left hemiplegia with secondary contracture, in which attacks of unilateral epilepsy developed themselves on the

paralysed side. After death, "plaques jaunes" were found in the right hemisphere, in the paracentral lobule and middle third of the ascending parietal convolution. In a similar case a "foyer ochreux" was found in the medullary substance, below the paracentral lobule. Secondary degeneration had occurred in the right internal capsule, and downwards in the posterior part of the left lateral column of the spinal cord, on the side of the paralysis.

The convulsions caused by cortical lesions appear in some cases to have the character of choreiform movements. A very interesting case of this kind occurring in the Salpêtrière last year is detailed with considerable minuteness.

The patient, a woman aged 60, who had probably contracted syphilis at the age of 25, was admitted into the Salpêtrière in 1874 for a trembling (?) of the left side of an obscure nature. In May 1876 she fell when going into bed, and received some injury on the right side of the head, in the superior temporal and posterior parietal regions. Next morning, she perceived that the left side of the body was weaker than the right. She was brought to the infirmary, and remained there till the beginning of June. On the 23rd of June she had an attack of loss of consciousness, followed by convulsive movements on the left side of the body. On admission into the hospital the next day, she was found to be quite sensible and free from pain, but affected with choreiform convulsions of the left side. These affected the zygomatic muscles, the elevator of the upper lip, and the orbicularis oris. Neither the eyes nor the eyelids were affected. The left sterno-mastoid and the arm and leg were affected in a similar manner. She had no tonic convulsions. The patient could not execute any voluntary movement with the left hand. Sensibility was unimpaired. The symptoms continued on the 25th, the choreiform movements being most marked on attempts at voluntary movements. Next day the convulsions had diminished, but paresis on the left side had increased. On the 28th the paresis of the limbs had diminished, but the facial paresis was still very marked. About the beginning of August the symptoms had almost disappeared, both the choreiform movements and the paresis. She died of acute pneumonia on August 19.

After death, signs of periostitis were seen in the right temporal region, corresponding with a painful swelling, which had developed some time before death. The internal surface of the skull at the junction of the parietal and frontal bones was rough and ulcerated over a space about the size of the palm of the hand. Pachymeningitis existed to a similar extent. The central part was adherent to the pia mater, and beneath this the convolutions were depressed in the region of the posterior half of the second and third frontal convolutions, and the inferior half of the ascending frontal. The depression was most marked at the base of the third frontal convolution, and at this point only the meninges were adherent. On cutting into the brain a few yellow lacunæ were found, one in the medullary substance of the sphenoidal lobe, another in the optic thalamus, and two others in the extraventricular nucleus of the corpus striatum. No other abnormalities existed elsewhere.

Westphal has described certain movements, which he calls automatic gesticulations, in connection with cysticerci of the brain. These occur in the same parts as are at other times the seat of epileptiform convulsions. A case of this kind is quoted, in which there were found several cysts in the pia mater compressing the cortex. Westphal attributes the auto-

matic gesticulations to irritation of the cortical centres; but on this point the authors would not be too definite. Samt has observed similar symptoms in cases of general paralysis, after the apoplectiform attacks to which these patients are so liable. MM. Charcot and Pitres have never observed such phenomena in connection with cortical lesions, and would hesitate to attach any diagnostic significance to them.

The authors devote a final chapter to the consideration of the topography of the motor area in the human brain, from the standpoint of the clinical and pathological observations above recorded. The motor area includes the paracentral lobule, the ascending frontal, and, according to the reporter, and in opposition to the views of Hitzig, the ascending parietal convolution. Probably also the bases of the three frontal convolutions belong to this area.

Samt has disputed the motor significance of the ascending frontal convolution, on the strength of a case which, however, will not bear examination, inasmuch as he has not shown that destruction of this particular convolution existed without paralysis. All the parts of this motor area are not functionally homologous. It is composed of different centres, which have each their own relation to definite movements.

This conclusion had been indicated by M. Bouillaud in 1825, from a consideration of the occurrence of monoplegiæ in connection with cortical lesions. In reference to the apparent contradiction between this hypothesis and the facts of experimental physiology, he observed, "A time will come when new light will dispel the contradictions which seem at present to exist". "The prediction of Bouillaud," remark the authors, "has to-day been realised, and the clinical facts on which he based his reasoning maintain their value."

As regards the exact position of the motor centres, clinical evidence is to be based either on destruction or on irritation of these centres. Obviously the former is more likely to admit of more accurate conclusions as to localisation, inasmuch as it is impossible to say how far the influence of an irritative lesion radiates; while limited destruction causes limited paralysis. The facts above recorded show that destructive lesions situated in the upper two-thirds of the ascending convolutions or in the paracentral lobule, cause paralysis of the limbs on the opposite side without paralysis of the face; while destructive lesions of the lower third of the ascending convolutions cause paralysis of the face on the opposite side without paralysis of the limbs.

In addition to the cases above recorded, and which are individually analysed, some others are referred to, reported by Löffler and quoted by Hitzig. In one of these, in consequence of fracture of the summit of the right parietal bone by a bullet, the individual became paralysed in the limbs at once. The face became paralysed on the twelfth day. The *post mortem* examination revealed an abscess at the seat of injury.

In a second case of bullet-wound at the posterior and superior extremity of the left parietal bone, close to the sagittal suture [over the postero-parietal lobule—leg-centre.—*Rep.*] paralysis immediately showed itself in the leg of the opposite side. On the seventh day paralysis attacked the arm, but this rapidly disappeared, while that of the leg recovered but slowly.

In a third case there was fracture by a bullet of the summit of the right parietal, causing paresis only of the left leg.

In a fourth there was fracture of the two parietal

bones at the vertex, causing paralysis, with hyperæsthesia only of the lower limbs.

What is true of paralysis is also applicable to partial epilepsy or limited convulsions. When the attack begins in the limbs, the lesion is situated near the upper extremity of the ascending convolutions; when it commences in the face, the lesion is towards the inferior extremity of the same convolutions. Apparent exceptions, one by Hughlings Jackson, and another by Huguenin, are shown to have been due to the lesion not being circumscribed or definite.

Several facts seem to indicate the situation of the centre for the arm in the middle third of the ascending frontal convolution. The authors think that it is impossible to state the exact position and limit of the centre for the lower extremity, nor is it possible to give the exact situation of the centres for the movements of the neck, the eyes, and eyelids. They do not think that the clinical facts are in accordance with the localisation of the centre for the movements of the eyes in the angular gyrus—a view which they attribute to the reporter; as they have observed a case, and others are on record, of softening of the inferior parietal lobule and angular gyrus without any motor affection of the eyes or eyelids. [The authors misapprehend my views on this subject. I have shown that movements of the eyelids and pupils, and of the head, result from electrical irritation of this region, but I have distinctly maintained that this is not a motor region; the movements being only the reflex or associated indications of excitation of subjective visual sensation. Destruction of this region in monkeys causes no motor paralysis whatever; but only, when unilateral, temporary blindness of the opposite eye, and total blindness when bilateral.—*Rep.*]

MM. Charcot and Pitres conclude this valuable contribution to cerebral pathology with the following *résumé* of their researches.

1. The cortex of the human brain is not functionally homologous; one part only is related to the exercise of voluntary movements. This region, which may be called the cortical motor zone, comprehends the paracentral lobule, the ascending frontal and parietal convolutions, and probably also the bases of the frontal convolutions.

2. All cortical lesions, whatever their extent, situated outside the motor zone, are latent as regards affections of motility; that is to say, they do not cause either paralysis or convulsions. Neither do they determine secondary degeneration of the spinal cord.

3. On the contrary, destructive lesions, even of the most limited character, affecting the motor zone, either directly or indirectly, necessarily cause affections of voluntary motor power.

4. If the lesion be sudden, if it at one blow destroy a large extent of the cortical motor zone, it gives rise to a sudden hemiplegia with flaccidity, and accompanied at a later period with secondary degenerations of the spinal cord and late rigidity of the paralysed muscles, completely resembling *hémiplegie centrale vulgaire*.

5. If the lesion be limited to a circumscribed area in the cortical motor zone, it gives rise to monoplegia (suppression of function), or to convulsions of the kind described as partial epilepsy (phenomena of irritation). After a certain time, limited destructive lesions of the motor zone determine a secondary degeneration, which descends along the crus cerebri and medulla oblongata to the lateral column of the opposite side of the spinal cord.



6. The study of paralysis and convulsions of cortical origin shows that the motor centres of the opposite limbs are situated in the paracentral lobule, and upper two-thirds of the ascending convolutions; and that the centres for the movements of the lower facial region are situated in the lower third of the ascending convolutions, in the neighbourhood of the fissure of Sylvius.

7. It is very probable that the centre for the individual movements of the upper limbs is situated in the middle third of the ascending frontal convolution of the opposite side.

8. Lastly, we do not yet know exactly the situation of the centres for the movements of the *nuque*, the neck, the eyes, or the eyelids.

D. FERRIER.

### CHAUVEAU ON ORIGINAL VACCINE.\*

THIS paper constitutes an elaboration of researches commenced more than ten years ago. M. Chauveau's argument for the inquiry is stated thus: "If there exists one species of animals more apt than another for the evolution of vaccinia, by obtaining lymph from this species we have the advantage of vaccinating with a more active agent." Three groups possess the vaccinogenous function, namely, man, solipeds, and the bovine species; while in other animals, as the goat, sheep, and dog, vaccination produces an eruption, but there is no reproduction of the virus, seeing its activity becomes rapidly extinguished generally after the first generation. M. Chauveau details first, his researches, showing the degree of vaccinogenous aptitude in the horse and other solipeds (ass and mule). He next compares in this respect the ox with the horse; and, lastly, contrasts the vaccinogenous aptitude of the bovine species with that exhibited by the human subject. Vaccinia he considers to be a disease of spontaneous origin in the horse; and the equine organism he regards as eminently fitted for the indefinite transmission of vaccinia. In two experiments, where he transmitted blood from a horse, exhibiting a good vaccinal eruption, into a young healthy horse, the result was failure. On the other hand, he found it easy to induce vaccinia in horses by subcutaneous injection of lymph; and though the inoculated points were excised in twenty-four to forty-eight hours after experimentation, a certain number of animals thus treated exhibited a general vaccinal eruption, exactly identical in appearance to natural vaccinia. Inhalation of dried vaccine through a tracheal wound, produced in a few instances (horses) vaccine vesicles on the lips and point of the nose. Moreover, two of the best examples of generalised vaccinia which M. Chauveau met with, were produced in young horses by causing them to take large quantities of vaccine among their food. The insertion of vaccine into the subconjunctival tissue, even in the weakest dose, induced vesicles; while four out of eleven horses exhibited vaccinia when lymph had been injected into their lymphatic vessels. Again, in eleven out of twenty-seven instances (horses), vaccinia was induced by injecting lymph into the blood-vessels. In the case of horses, as with other animals, youth is decidedly favourable to the development of vaccinia. M. Chauveau considers that

vaccinia may occur without any eruption being detectable, and states that he can "cite nine instances of fruitless revaccination in horses which, as the result of intravascular vaccinal injection, had presented no other symptom than a fever, so slight that it might be regarded problematic". Failures to infect with lymph introduced through the respiratory and digestive tracks, are due to imperfect penetration of the contagium, or to a deficiency in the amount of lymph used. Solipeds seem to recover very rapidly the vaccinogenous aptitude; that is, they soon become amenable to successful revaccination.

Chauveau next treats of the vaccinogenous aptitude of members of the bovine species, and examines the characters of the natural disease in them, of that induced by hypodermic injection, and of that caused by introducing vaccine into subconjunctival tissue, and into blood-vessels.

The last observations detailed in this paper refer to the vaccinogenous aptitude in man as compared with that of the equine and bovine species.

M. Chauveau sums up his conclusions as follows.

1. The three principal species of vaccinifers (man, ox, and horse) are equally capable of transmitting vaccinia indefinitely; but the horse is distinguished by the relative frequency in this species of a truly diffused vaccinal eruption, which may in young horses follow even subcutaneous inoculation.

2. When in place of subcutaneous inoculation vaccine is inserted into subconjunctival tissue, two effects are met with in all three species; namely, local swellings and constitutional immunity. Hence these species resemble one another in their vaccinogenous aptitude.

3. These common and constant effects are not the only ones produced by the injection of vaccine into subconjunctival tissue. In horses (especially young ones), sometimes a general pustular eruption occurs which, from its site and general characters, does not differ from that in the spontaneous disease. A vaccinal exanthema has not been thus induced either in cows or in man, although many carefully conducted experiments have been made to obtain it. This shows that the organism of the horse possesses, in relation to aptitude for the development of this exanthema, an incontestable superiority.

4. This superiority is to be observed, also, when vaccine is introduced directly into the lymphatics and blood-vessels, or enters through the natural channels for absorption.

5. The results of this experimental study prove (as well as, if not better, than clinical observation), that horses possess a better aptitude for the development of vaccinia, either under the influence of occult contagia, or by the problematic intervention of any other equivalent cause. Moreover, in this respect, the ox is not superior to man. Hence, according to this study, fully confirmed by clinical facts, the organism of the horse is, conformably to Jenner's view, the native soil of spontaneous vaccinia. It is there we must look for this precious malady if we desire to obtain, in the highest degree of activity, both the malady and its virus, so happily transformed into a prophylactic agent.

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\* "Contribution à l'étude de la Vaccine Originelle, par M. A. Chauveau."—*Revue Mensuelle de Médecine et de Chirurgie*. April 1877.

## ON A CASE OF CYLINDROMA OF THE LUNG.\*

BY PROFESSOR R. HESCHL, of Vienna.

THE position of all tumours whose structure does not exhibit a reproduction of some physiological type is very obscure. It is impossible to designate them by any perfectly apt characteristic, and their names change according to the stand-point of different observers and their more or less extensive powers of invention. Thus the whole great group of sarcomata is classified more by negative than by positive features; neither their development nor the significance of their elements is known. It is quite optional which forms to unite under any generic name, which to describe separately, or which should be otherwise classed. So it happens that an observer here or there seizes upon certain accidental textural elements as a specific appearance, and names a tumour after them; and thenceforward all tumours in which this or something like it is observed are called by others by the same name, in perfect indifference to the other characters of the growth. No sooner has the most heterogeneous tumour found a name than everybody sees one like it, and the new fashion becomes universal.

An excellent example of this confusion of nomenclature occurs in the so-called cylindroma of Billroth, to whom, as is known, the description of this form of tumour is ascribed. It is characterised histologically and macroscopically by "the presence of hyaline cylinders with club-shaped processes; these form a framework through which winds another system of cellular cylinders (embryonic cylinders). These compound rounded parts of the tumour become enveloped in stronger and thicker fibrous capsules, causing a division of the growth into single nodules and lobules. Whether cylindroma, which hitherto (1856) has only been observed in the orbit and stomach, belongs to the carcinomata, cannot yet be defined, but it is certain that it has a great tendency to local recurrence."

This is the first definition, given by Billroth, of cylindroma; and since that time it must have led to many errors, and to the classification of at least three quite different tumours as cylindromata, while it would exclude that which I am about to describe. The three kinds are:—

*a.* Tumours characterised by the presence of a more or less branching cylindrical, or, better, spindle-shaped formation within the essential connective tissue part of their structure; the formation proceeding, according to Billroth's acceptance, from a hyaline metamorphosis of the connective tissue:

*b.* Tumours characterised by the hyaline condition of the connective tissue sheath or adventitia of the vessels, with more or less abundant new formation of vessels:

*c.* Tumours characterised by the presence of colloid spherical and spheroidal structures with differently formed and arranged—plexiform—cell-groups. The metamorphosis of cells and intercellular substance in these last two cases is taken by observers for a hyaline formation. The nature of the tumour, apart from these possibly accidental appearances called cylinder-formations, remains completely out of sight; it has happened here, as researches multiply, just as it has with giant-cells, which are

found in tumours of the most different kinds, and therefore are not suitable to form descriptive features without regard to the other conditions present.

If we exclude all growths hitherto described as cylindromata which obviously belong to other well-defined groups, as, for instance, the growths possessing vessels with gelatinous adventitiæ, and the colloid cylindro-epithelioma, there remain for the present only those under *a* and one under *c* of the foregoing forms. Even if we dare do with these what Ewetsky has recently done to all tumours of this description, place them under the sarcomata when they possess connective tissue in its various forms, deviate from the physiological type (*See* page 272). The employment of definitions is, in our present complete ignorance, impossible.

There are many peculiarities by which to distinguish the tumour immediately to be described. It is not formed simply of normal fibrous connective tissue, but contains other varieties of the group of connective substances; it is a mixed growth of fibrous and homogeneous connective tissue, osseous and vascular tissue, with, superadded, the most beautiful "branching cactus-leaf-like homogeneous cylinders" which anyone could wish for in a cylindroma; it is a tumour, above all, which markedly differs from all previously described cylindromata, and which, were it necessary, I might name true cylindroma in distinction from all these. The case is as follows.

No. 6144. Sept. 3, 1874. S. R., aged 72, labourer. Body small, fairly well built; the skin, especially in the lower extremities and scrotum, swollen with intense œdema; some dilatation of the thoracic veins. In the head, except a thin gelatinous membrane dotted with bloody points on the inner side of the dura mater, there were no changes except those of senility. There was adenoma of the thyroid, with partial calcification of the stroma; and the alveoli were filled with colloid matter. The right pleural cavity contained two litres of clear wine-coloured serous fluid; a small portion of the lower lobe of the lung was compressed backwards; the upper and middle lobes were crepitant; the lower was rather compressed, contained little air, and was very œdematous. The lower lobe presented an elastic conical appendage to the lung, which was embraced tightly by the thickened tendinous pleura, and which was found to be a part of the tissue of the lobe strangulated by a small compressed cicatricial tumour. The left lung was adherent and very œdematous. There were complete easily separable adhesions of the heart to the pericardium; the muscular wall was soft and rotten; there was senile thickening of the endocardium and valves; little concretions were on the apices of the muscoli papillares. Two litres of serum were in the peritoneal cavity; the abdominal organs were undergoing senile changes; in the left kidney was an infarct of the size of a hazel-nut. The tumour of the lower lobe of the right lung was divided by fibrous septa into eight oval lobules varying in size from a hazel-nut to a walnut, of which those anterior were greyish red, soft, and traversed by yellow reticular striæ, and those posterior were hard and like fibrous tumours in co-existence. The first possessed round and spindle-shaped, sometimes fatty, cells, many vessels, and in a great part hypertrophied elastic fibres, and thicker elastic fibrous networks. Posteriorly there were small concretions, and in a small part genuine osseous tissue in irregular plates and

\* Wiener Medizinische Wochenschrift, April 28th, 1877.



nodules of the size of split peas; near by, compressed firmly by a whitish-looking thick part of hypertrophied elastic fibres, were here and there heaps of round and spindle-shaped cells, and in two places between these fibrous elements there were colloid-looking structures of different forms—*a*, roundish, bean-like, or spindle-form; *b*, staff-shaped or rod-like; *c*, many with leaf-like processes like the branches of cactus. These structures did not colour with carminate of ammonia, but took up Rollett's acetic acid solution of carmine very readily, and gave no reaction with acetic acid; they had generally a perfectly smooth contour, but here and there they were distinctly granular. In the middle of each a fine elastic fibre could be recognised. By teasing small sections, these structures were easily isolated, not without injuring the larger ones; by squeezing, they were seen to be composed of a homogeneous semi-solid substance, which coloured bright yellow with iodine, blue with dahlia blue, and resisted alkalies. With reagents, the granular appearance was shown to be produced not by fat, but by a granular separation of the mass, and the substance corresponded in appearance to the colloid matter of the thyroid gland, or the amyloid material of the liver. These structures appeared to belong to spaces in the tissue to which no epithelioid lining could anywhere be found; and, nevertheless, there could be seen everywhere a direct transition of these structures into connective or elastic fibres, a transition from which the conclusion of a colloid degeneration of these elements could be drawn. The elastic thread which could be seen in the centre of each showed itself sharply defined, and supported the view of a hyaline degeneration of connective or elastic fibres into these structures. Moreover, in the parts where there were great numbers of these structures, there were no traces of unaltered elastic elements to be found, although in the neighbouring parts they were numerous, and there were traces, and occasionally large quantities of black lung-pigment present. These seem to have been parts of the original lung-tissue which had been invaded by the new growth.

There is another point which cannot escape notice. Where the smallest of these structures lay, the surrounding fibrous tissue always corresponded to their rounded contour, chiefly by circular striæ, and they were recognisable as cells, the striation being arranged to correspond to their processes; whilst extended forms like the second described had the striation and fibrillations of the connective tissue arranged parallel to their long axis. From this the conclusion follows that each of these little bodies is not a mere transverse section of the larger forms; this is the more certain as these forms always appeared grouped together, and in the same field smooth elongated and slightly branched cylinders of very remarkable length could be observed, which lay in great numbers near one another, and were accompanied by parallel fibrillated tissue. It has been already noted that in certain parts of the growth evidently hypertrophied elastic fibres could be seen; of these, although quite like the normal elastic elements of the lung in their branching, their wavy course and their chemical reactions, there were some not to be distinguished from slender cylinders, at least in certain parts, in so far as increased size, lustre, rounded outline, and absence of transverse striation characterise cylinders. On looking more closely at the most complex forms, and allowing for the inequality of the section, if we imagine the whole reduced equally to the thinnest part, a figure remains

bearing the greatest possible resemblance to an elastic fibre of the lung. If no connection can be traced between such a form and a still preserved fibre, the metamorphosis is yet as evident as it is possible; a metamorphosis which closely corresponds to the hyaline appearance of the connective tissue described by Billroth in his "Cylindroma", and which here, perhaps because the disease has affected an organ specially rich in elastic tissues, expresses itself in the elastic elements in a very characteristic manner. The detailed reactions show that the chemical qualities of the diseased tissue, so far as they could be investigated under the microscope, were not particularly altered by this increase of bulk. Moreover, whole networks of fibrous tissue of the ordinary kind showed this increased bulk, swelling, and approach to a cylindrical form; but it must remain uncertain, whether or not here and there, as appears very probable, a change to cylinder-elements does take place. It remains to be noticed that in both thin and thick fibrous parts of the tumour a form appeared occupying the position of the pre-existing lymph-spaces, which presented the appearance of many branched cylinders of a semi-solid, jelly-like, without doubt nitrogenous material; and it was very evident from a certain parallelism of the metamorphoses in the various elements of the lung-tissue that one and the same change had affected the connective and elastic fibres, and at the same time the contents of the lymph-spaces. One statement only found no support in these researches; that is, Sattler's colloid metamorphosis of the parenchyma cells into cylinders. For this our case adduces no data. Whilst it must remain uncertain whether, besides the (to me) conspicuous metamorphosis of elastic elements to form these cylindromata, and the very probable similar change of the other connective tissue, the departure originates in the tissues surrounding the lymph-spaces or in the cells in their walls, a transformation of cells into these forms must be denied. This is the first time that such a tumour has been observed. Perhaps we may ask whether any of the tumours hitherto described as cylindromata could be classed with it? Already, in the introduction, the difficulty of comprehending those tumours not to be classified as physiological types was pointed out, and above all, we emphasized that a single striking textural element cannot absolutely indicate the character and chief qualities of a tumour. If we recall the characters of this tumour, we recognise that it is a growth containing different forms of connective tissue, in which part of the tissue has suffered a gelatinous metamorphosis, and in whose lymph-spaces a colloid substance is disposed, which possesses cylinders, spindles, cactus-leaf branching forms, and by special characters comes into the universal group of connective tissue tumours. If we describe the vascular tumours with gelatinous metamorphosis of the adventitial coats of the vessels as cylindro-angiomata, those with gelatinous club-shaped masses in cellular envelopes (the original Billroth's cylindromata), as cylindro-myxomata, our tumour should be called "cylindro-desmoid", as "desmoid" is applied to all fibrous tumours which are almost entirely formed of fibrous tissue; a description which certainly deserves more credit than if we followed the projected universal scheme and called it an osteo-myxocylindro-sarcoma.

ROBERT SAUNDY, M.B.

# MITCHELL ON THE RELATIONS OF PAIN TO WEATHER: BEING A STUDY OF THE NATURAL HISTORY OF A CASE OF TRAUMATIC NEURALGIA.

IN the April number of the *American Journal of the Medical Sciences* for 1877, Dr. S. Weir Mitchell contributes a paper of twenty-five pages, illustrated with eleven diagrams. He instances the popular belief that old wounds, injuries, and diseases of the bones and chronic rheumatisms suffer renewed pain on the approach of a storm. The celebrated Jenner remarks in his "Forty reasons for not accepting a friend's invitation on signs of rain"—

"Hark, how the chairs and tables crack,  
Old Betty's bones are on the rack!"

Yet, except an able paper by Dr. Hewson, there is scarcely any literature on this or kindred subjects. The author finds that, of fifty cases of amputation of limbs, less than half felt unusual sensations upon the coming of or during an east wind. Of the rest, two-thirds insisted on their power to predict such a change of weather, but said they were unaffected by a thunderstorm, or by rain coming from the south. The remainder thought any great change in the weather was apt to cause them pain. Dr. Mitchell resolved to investigate the relations of pain to weather. It was difficult to find the right kind of cases. The patients selected must be intelligent. On the other hand, they should not be too sensitive, nor should they be always in pain. At last he was fortunate enough to find a patient, Captain Catlin, U.S.A., aged thirty-five, who was in good health until his foot was crushed by a twelve-pound round shot in 1864 at the Weldon railroad. In three hours the leg was cut off below the knee, and he got up again in thirty days. In from six to nine months he had considerable pain in the stump, referred to the metacarpo-phalangeal articulation of the (lost) great toe in December 1874. It is sometimes felt through all the (lost) toes or in the heel. The attacks of pain are preceded by a tendency to sleep, and begin with a steady burning pain, with a sense of twitching in the lost parts, and visible twitches in the muscles of the stump. The pain begins abruptly, increases in severity, and lasts from twelve to thirty-six or rarely forty-eight hours. Much handling of the stump brings on spasms of the muscles of clonic character (Brown-Séguard's spinal epilepsy). In 1875 Dr. J. H. Brinton removed one and a half inches of the peroneal nerves without much relief to the pains. The patient was stationed at West Point, N.Y. Diagram 1 is an annual neuralgic curve, showing the monthly ordinates of neuralgic duration. The neuralgia existed for the first year of this study during 1,871 hours; in the second year 1,640 hours; in the third year 1,892 hours. The three winters gave 1,318 hours, the summers 1,320, the autumns 1,373, the springs 1,392 hours of pain. The amount for spring, which is in America the season of greatest depression of health-tone, when choreas return, and epilepsies are difficult to control, but little exceeds the autumn pain crop. As to the time of day, we have a good deal of exact knowledge in a number of the neuralgias. Of eleven cases of sciatica, subject to distinct remissions, the onset of acute pain was in nine at night, and, in four of the nine, between 12 p.m. and 4 a.m.—a marked contrast to Captain Catlin's attacks. Neuralgias of the fifth nerve are so apt to recur at the same hour daily, usually between

10 and 12 a.m., that they are generally regarded as malarial. But even traumatic ones observe a similar law of periodicity. Diagram 2 shows the choral relations of Captain Catlin's case. It seems to show that from 12 p.m. to 3 a.m. the tendency to attacks was least; greater from 7 a.m. to 11 p.m., and greatest at 11 a.m.; next, at 2 and 4 p.m. Diagrams 3, 4, 5 show the relations of the pain to temperature, barometer changes, ozone, and storms, for certain months. A falling temperature alone does not seem to be a competent cause of pain, and a rise of the thermometer commonly occurs with a falling barometer. The rare occasions of extreme rise in temperature without much fall in the barometer, do not seem to give rise to pain, and this is in agreement with the general experience of neuralgic people, and also with their experience as regards artificial heat. But some attacks, though rarely, commenced on a medium high and rising barometer with clearing weather. The relations of pain to the state of atmospheric pressure in this case are apparently definite, and nearly constant. Thus we find that when, the atmospheric pressure lessening, the mercury falls, there is apt to occur during the fall, and before it is complete, an attack of neuralgic pain; and that this is most likely to take place when the lessening pressure culminates in rain. [The reporter has noticed in asylums, as well as in private patients, that very excitable and nervous people, especially those subject to alternating mania (*folie circulaire*) are most excitable when there is a great and sudden fall in the mercury of the barometer.] Diagrams 7 and 8 show the relations to humidity, and a storm-map for September 1875. Diagrams 9 and 10 are for other times, but of similar kind. Captain Catlin formed some conclusions of his own as follows. "Neuralgic intensity does not seem proportional to the amount of rainfall. At the exterior of a storm-disturbance the pain is usually less severe; indeed, at times I have been so far from the disturbed centre as to just perceptibly feel it... The abruptness of the barometric fall does not seem to have much to do with the causing of pain, nor is the length of attack dependent, as it seems, on the length of the storm."

It was rather the fact of storm or the disturbance of pressure that induced, or at least accompanied pain, than its depth, duration, or extent. Dr. Mitchell points out that there are, no doubt, personal elements in the equation which are more or less mysterious, and must be taken to account for a certain number of the neuralgic fits, which do not seem to have perfect relations to casual weather states. Any lowering cause, such as dyspepsia, overwork, and anæmia, however brought about, is apt to increase this sensitiveness to barometric changes. A large number of neuralgic attacks seem to be definitely related to those perturbations of atmosphere which we know as storms. The separate factors, such as lessened pressure, rising temperatures, greater humidity, winds, etc., appear, as a rule, to be incompetent when acting singly, to give rise to attacks of pain. Either, then, it is the combination which works the mischief, or there is in storms some as yet unknown agency productive of evil. It may be either electricity or magnetism. In 1867 and 1868 the aurora borealis was frequent and remarkably brilliant, and Captain Catlin then had it most forcibly called to his attention that the neuralgia was apt to prevail when the northern lights were intense. But an intense aurora is apt to be followed by a storm, indeed is almost sure to be. (Lieut. Weyprecht, Austrian Polar Expedition.) "A long and patient scientific inquiry has



confirmed the popular idea which relates some fits of pain to storms.

"A still more valuable and novel conclusion has arisen out of the study. Every storm, as it sweeps across the continent of America, consists of a vast rain-area, at the centre of which is a moving space of greatest barometric depression, known as the storm-centre, along which the storm moves like a bead on a thread. The rain usually precedes this by 550 to 600 miles, but before and around the rain lies a belt, which may be called the neuralgic margin of the storm, which precedes the rain about 150 miles. This fact is very deceptive, because the sufferer may be on the far edge of the storm-basin of barometric depression, and, seeing nothing of the rain, yet may have pain due to the storm. See diagram 11. It is somewhat interesting to figure to oneself thus a moving area of rain girdled by a neuralgic belt 150 miles wide, within which, as it sweeps along in advance of the storm, there prevail in the hurt and maimed limbs of men and in tender nerves, and rheumatic joints, renewed torments called into existence by the stir and perturbation of the elements."

Fig. 11 is a diagram of one storm with the rain-area, as founded on Professor Loomis's observations, and its neuralgic belt, as founded on Dr. Mitchell's observations.

[The reporter thinks that Dr. Mitchell can hardly have seen Sir James Paget's papers on "Periodicity in Disease", or heard of the clinical remarks on meteorology, in relation to the success of operations, made on several occasions by Mr. Spencer Wells, or he would have quoted these observations. However, this in nowise detracts from the merit of this remarkable and original inquiry. It is devoutly to be wished that other inquirers in Europe and America may go on with the investigation, and that Dr. Mitchell himself will not abandon it.—*Rep.*]

W. BATHURST WOODMAN.

## PATHOLOGY.

GAULE ON TUBERCULOSIS OF THE TESTIS.—Dr. Justus Gaule (Virchow's *Archiv*, January and February 1877) has collected sixteen cases which clinically would come under this head. He has made careful microscopical examinations, and he shows that this affection is often connected with tuberculosis of other organs; that it begins in the epididymis as a catarrh of the seminal ducts, and spreads thence to the testis. Secondly to this catarrhal inflammation, the walls of the ducts and the intertubular connective tissue become involved. The nodules or tubercles are formed of groups of seminal ducts plugged with the products of catarrhal inflammation, and they tend to undergo caseous degeneration; giant-cell appearances are not uncommon, being formed by the epithelium lining the lumen of a duct, while around it the wall of the duct is the seat of a small-celled reticulated growth undistinguishable histologically from tubercle. By caseation and softening cavities are formed. He suggests the name "phthisis testis", on account of its analogy to pulmonary phthisis, as both commence by a catarrhal inflammation of tubular structures, which spreads deeper and involves the interstitial tissues, while, in both, tubercular new formations may be superadded to the inflammatory appearances.

BERNS ON THE PATHOGENY OF FEVER.—Dr. A. W. C. Berns publishes (Virchow's *Archiv*, February 1877) the results of some experiments to test Hueter's facts and theories respecting fever. He concludes thus. The last observation, in which the blood-pressure of a healthy and of a fevered dog were measured synchronously, speaks completely against Hueter's theory. Hueter says that the blood accumulates in the internal organs (by globular stasis), and thereby the periphery is deprived of its normal quantity of blood. But this accumulation of blood in the "internal organs" may be produced artificially without globular stasis, by section of the splanchnic nerves and by tying the portal vein, in which cases Hueter's results should follow; but in both these cases the blood-pressure falls enormously, whilst in fevered animals we have always found a higher blood-pressure than in the same animals in healthy conditions. This shows that in truth the blood cannot accumulate in the internal organs, as in that case the blood-pressure would sink.

PATIATA ON SARCOMA OF THE LYMPHATIC GLANDS.—Dr. Raissa Patiata (Virchow's *Archiv*, February 1877) describes three cases of sarcoma of the lymphatic glands. He says that hitherto two different forms of sarcoma of these glands have been recognised; 1, tumours in which the stroma of the gland becomes embryonic, and the cells depart more or less from the type of lymph-cells; and 2, pure hyperplastic growths of the gland-structures preserving their normal characters. Of the first form little is known; secondary sarcoma of the lymph-glands occurs rarely; still more rare is the primary form. Virchow speaks of it as possible, and gives four cases collected from medical literature. Of Dr. Patiata's cases, which belong to the first class, two were primary, the other secondary; the first was an "alveolar angio-sarcoma" of the axillary glands, and was developed from the walls of the blood-vessels; the second was a "fibro-sarcoma with secondary formation of lymph-canals" which commenced in the follicles; the third was a "melanotic sarcoma of the inguinal glands, secondary to a melano-sarcoma of the skin of the upper part of the thigh", and commenced in the lymph-canals.

EWETSKY ON CYLINDROMA.—Dr. Von Ewetsky (Virchow's *Archiv*, January 1877) has studied three examples of cylindroma in which the appearances were due to a hyaline degeneration of the connective tissue. He recapitulates briefly the leading features of all the varieties of these tumours hitherto described, and suggests the following classification.

### I. Pure forms.

- A. Plexiform sarcoma. 1. Plexiform sarcoma with colloid degeneration of cells; 2. Plexiform sarcoma with hyaline degeneration of the connective tissue stroma.
- B. Angioma mucosum proliferum.

### II. Mixed forms.

- C. Plexiform angio-sarcoma.
- D. A combination of angioma mucosum proliferum with other new formations.

ROBERT SAUNDY, M.B.

TIZZONI AND PARONA ON FIBRO-LIPOMA OF THE SPERMATIC CORD.—In an account of a case of this kind in the *Annali Universali di Med. e Chir.* for March 1877, the authors begin by expressing their sense of the great difficulties attending the

study of those tumours of which the testicle and spermatic cord are the seat.

Their case was that of a carpenter aged 45, with a constitution originally robust, but now impaired by drink and venereal disease. The tumour was in the right scrotum, about the size of a fist, of gradual growth, and of about two years' duration. It reached from the outer inguinal aperture to the bottom of the scrotum, and was continuous with the spermatic cord, which could only be distinguished above it. The testicle was healthy, as were other parts. A small collection of serous fluid was detected, by the feel and by transmitted light, in the lower end of the growth, all the rest of which was of firm consistence. The tumour was cut out, and with it the testicle and adjacent part of the spermatic cord, which were inseparable from it. The cord was tied with an elastic ligature cut short, and the wound closed with twisted sutures. The wound was completely cicatrised in ten days; after which the patient caught cold, was attacked with tetanus, and died three days later, no examination being allowed. Microscopic examination of hardened sections, stained in carmine and logwood severally, showed ordinary adipose tissue with fibrous septa, and abundant vessels and nerves. According to the authors, the vessels were affected with obliterative inflammation, being in some places completely occluded with proliferated epithelium. In the sheaths of the nerves also, they seem to have noticed a dilatation of the lymphatic spaces, together with a general thickening of the sheath and infiltration of the same with leucocytes.

RUSHTON PARKER.

STIRLING ON THE CHANGES PRODUCED IN THE LUNGS BY OLLULANUS TRICUSPIS.—An important contribution to the *Quarterly Journal of Microscopical Science* for April, has been made by Dr. W. Stirling on this subject. The nematode worm, *Ollulanus tricuspis*, was first described by Leuckart as infesting the stomach and intestinal tract of the cat, and its embryos which migrate, like those of *Trichina*, to various distant organs, have been made the subject of a series of observations by Dr. Stirling. On examining the lungs of an "ollulanised" cat, with the naked eye, they were found to be studded with small rounded nodules, or prominent white specks about the size of a pin's head, distributed throughout the vesicular structure. After entering upon an interesting digression with regard to the best methods of preparation of the lungs for microscopical examination, Dr. Stirling gives the histological structure of these nodules, which, he states, are formed of a mass of reticulated tissue enclosing one or more worms which are coiled up within a distinct cyst of connective tissue. The importance attached to these nodules will be at once recognised on considering their close resemblance to miliary tubercle. Thus the reticulated network appears to be a lymphoid growth, the result of interstitial inflammation, and possesses in its meshes the large multinucleated cells (myeloid cells) found in the earlier stages of miliary tubercle, whilst the surrounding alveoli are packed with proliferating epithelia as in catarrhal pneumonia. Unlike the embryo of trichina, the ollulanus does not infect the connective tissue, and in the lungs the vesicular structure is alone the seat of these adventitious products. Cardiac hypertrophy and increased size of the middle coat of the pulmonary arteries result in these cases, from the obstruction dependent upon the obliteration of numerous vascular areas.

ARNDT ON TUBULAR DEGENERATION OF THE MEDULLARY NERVE-SHEATH.—A notice of Professor Arndt's observations on this point is shortly summarised in the *Monthly Microscopical Journal* for April. The medullary sheaths show peculiar concentric layers in partial softening of the spinal cord, and in grey degeneration. The inflated condition of the medullary sheath left no doubt as to its pathological change; but Arndt believes that it indicates the normal growth of the sheath by concentric layers.

DOWDESWELL ON THE CHANGES OF THE FIXED CORNEAL CORPUSCLES IN INFLAMMATION.—In a paper by Mr. Dowdeswell, which originally appeared in the "Proceedings of the Royal Society", and which is reproduced in the *Monthly Microscopical Journal* for June, it is shown that immigration of pus-corpuscles forms the essential feature in inflammation of the cornea, and that proliferation of the fixed corpuscles of the tissue does not occur, as some authorities assert. By a modification of the gold method of preparation, whereby the tissue is exposed to the action of potash, it could be demonstrated that the vagrant cells were alone undergoing subdivision, and that no segmentation of the fixed corpuscles took place.

BEVAN LEWIS.

BRIGIDI ON A CASE OF PERSISTENCE OF THE THYMUS GLAND.—Dr. Brigidi of Florence relates the following interesting case of persistence of the thymus gland in a man aged 29, in the *Commentario Clinico de Pisa* (abstracted in *Journal de Médecine et de Chirurgie Pratiques*, April 1877). When making a necropsy on a patient who had died of pulmonary tuberculosis, Dr. Brigidi found in front of the trachea a reddish elongated body 33 centimetres long, 70 millimetres wide at one part, and 54 at another. After prolonged immersion in alcohol it still weighed 190 grammes. Microscopic examination revealed the elements of a thymus. The body had undergone considerable hypertrophy, which caused it to resemble a sarcomatous mass.

It is interesting to remark that this abnormal development of a veritable tumour in the mediastinum had caused no symptoms. We know that certain influences have been attributed to the thymus, whence the name thymic asthma has been given to certain forms of stridulous laryngitis. A thymus so much developed as this, and causing no symptoms, has rarely been met with. The heart-sounds were dull. It is probable that percussion of the region would have elicited a dullness of an extent which, in the absence of any other lesion, might considerably embarrass any physician not previously warned of the possibility of such a lesion. The obstacle to the respiration, by the persistence of the thymus, might have contributed to provoke the development of the pulmonary tubercles.

W. DOUGLAS HEMMING.

#### RECENT PAPERS.

- Multilocular Echinococcus. By Dr. G. Scheuthauer. (*Allgemeine Wiener Medizin. Zeitung*, May 22 and 29.)  
 Pathology of Tumours of the Brain. By Dr. J. Weiss. (*Wiener Medizin. Wochenschrift*, May 5.)  
 Pathogeny of Chronic or Perforating Ulcer of the Stomach. By Dr. G. Colombo. (*Annali Universali di Med. e di Chir.*, June.)  
 A Case of Congenital Dextrocardia. By Dr. F. Mosler. (*Deutsche Medizin. Wochenschrift*, June 30.)  
 On some of the Relations of Tissue-Change in Conditions of Fever and Hunger. By Dr. W. Zuelzer. (*Berliner Klin. Wochenschrift*, July 2.)  
 Amyloid Substance in the Heart and Endocardium. By Dr. Heschl. (*Wiener Medizin. Wochenschrift*, June 30.)



## MEDICINE.

**CHVOSTEK ON LEUCHÆMIA.**—Dr. Chvostek contributed the following three cases of this disease to successive numbers of the *Wiener Med. Zeitung* during the early part of the present year.

**CASE I.** An officer in the army, aged 46, had swelling of the submaxillary lymph-glands after a sore-throat which occurred in January 1875. They did not subside, and formed obvious tumours before the end of the year. Sudden amaurosis of the right eye, with myosis, appeared at this time. The fundus appeared normal, and it was supposed that the lymphatic growth in the neck was compressing the cervical sympathetic. Under continuous galvanism, the tumour in the neck diminished, the pupil dilated to its natural size, and sight returned to the eye. The glands in one armpit had, however, enlarged. In May 1876, the inguinal glands were also swollen, and the tonsils and spleen greatly enlarged. The patient became weaker, and died of acute pleuropneumonia at the end of the following June. Beside double pleuritic effusion and hepatized lungs, the spleen was found to weigh 1,651 grammes (about 52 ounces); the liver was also enlarged, as well as the solitary follicles of the intestines; and the bronchial, mediastinal, lumbar, and hypogastric lymph-glands were all hypertrophied. Except some atheroma of the aorta and hypertrophy of the left ventricle, the other organs were healthy. There were pale coagula in the heart and elsewhere, with excess of white blood-corpuscles. There is no mention of the blood being examined during life. Lymphatic tumours were found in the hypertrophied spleen, and in the mucous membrane of the œsophagus and trachea.

**CASE II.** An army-surgeon, aged 48, excepting an attack of ague and a urethral stricture, had enjoyed good health until about 1871, when he noticed that the spleen was enlarged. In February 1873, the left lobe of the liver was also found to be increased in size, then the inguinal glands, and this was accompanied by epistaxis and loss of flesh. When first seen, he was anæmic, with œdema of the ankles, great enlargement of the liver and spleen, and of the glands of the axilla and groin. On microscopical examination of the blood, the white corpuscles were found almost equal in number to the red: they were somewhat smaller than usual. Treatment with iron, quinine, and faradisation over the spleen was without result, and the patient died in 1875. There was no necropsy.

**CASE III.** A married woman, 50 years of age, had frequently suffered from epistaxis and menorrhagia; and, during the last year, had become thin and pale, with pains in various parts of the body, and frequent dyspnœa. When first seen in April 1872, there was great anæmia, with a *bruit de diable* in the right jugular vein; the spleen was enormous, filling more than half the abdomen. The white blood-corpuscles were increased in number. Faradisation with dry brushes produced temporary contraction of the spleen, but was without permanent benefit, and galvanism proved equally useless. The patient was then lost sight of.

Dr. Chvostek remarks that of these three cases, the first began with hypertrophy of the lymph-glands (anæmia lymphatica, lymphæmia of Virchow, Hodgkin's disease), and then the spleen also enlarged (splenæmia of Virchow, leucocythæmia of Bennett); the second began with splenic, and went on to he-

patic and glandular swelling; and the third was purely splenic, unless the bones may also have been involved (leuchæmia myelogenica of Neumann), which the author thinks indicated by pains referred to the os calcis, sternum, and shoulders. This disease of the bones was certainly absent in the first case. The disease occurs more often in men than in women. Putting together Ehrlich's 91 cases, Mosler's 16, and the author's four (including one of splenic leuchæmia in a youth of seventeen, of which details are not given), he finds 75 in men to 36 in women. He proceeds at great length to compare the supposed etiology, course and symptoms of his three cases with the statements in Mosler's monograph. The longest time in which the disease has lasted before a fatal termination is eight years; it appears to be usually more rapid in young patients. Quinine, iron, injection of the enlarged glands with arsenic, and treatment by galvanism and electricity, have proved as useless in Germany as the same methods of treatment, with phosphorus, iodide of potassium, and many other drugs, have in the hands of English physicians.

**PEPPER ON ADDISON'S DISEASE.**—Dr. Pepper of Pennsylvania published the following case in the *American Journal of Medical Sciences* for January 1877. A farmer, aged 40, began, four years before the date of the first report, to suffer from weakness, vertigo, and discoloration of the face, hands, and groins. Of his family history, it is noted that, "one of his aunts was insane, a sister highly eccentric and hyochondriacal, and two of his children subject to eclampsia (? infantile convulsions) in their early years". Lately, nausea and vomiting had come on, with severe deep-seated lumbar pain. In Oct. 1869 there was characteristic bronzing of the face, neck, and back of hands, with less discoloration of the axillæ, hams, and genitals. The mucous membranes were free. There was no fever, and no emaciation. The urine was of specific gravity 1016, high coloured and free from albumen; it deposited uric acid crystals. The patient was treated with iron, quinine, arsenic, nux vomica, silver, and other drugs; and morning and evening the faradic current was applied, the anode being placed over the kidneys, and the cathode below the ensiform cartilage. He improved up to Christmas and gained flesh, though minute dark brown spots appeared on the skin. At the beginning of 1870 his digestion became worse, he became more thin and anæmic, and the skin gradually darkened. After reaching a condition of the utmost prostration in March, he rallied again; but, soon afterwards, a fresh attack of vomiting and diarrhœa reduced him lower than before. Signs of pulmonary disease also appeared, and he died before the end of April. There was found after death very local fibrous and calcareous change, with vomica, at both apices. The heart was pale and wasted. There were several effusions of blood under the serous coat of the small intestines, which were otherwise normal. Both suprarenal bodies were adherent to the surrounding fat. The left was converted into a small puckered fibroid nodule. The right was swollen, and consisted of homogeneous caseous material, with some calcareous matter and cholesterine. "The abdominal sympathetic, including the ganglia and the branches to the suprarenals, were dissected with great care. The parts presented their normal size, appearance, and consistence; and, upon prolonged microscopic examination, appeared quite healthy.

The nerve-cells, in particular, were typically healthy for the most part, and only here and there was there even a suspicion of an excess of granular pigmentary matter in them."

The duration of the disease was about four years and a half from the first distinct symptoms.

P. H. PYE-SMITH, M.D.

DALL' ARMI ON THE BURSTING OF A CAVITY IN THE LUNG INTO THE VERTEBRAL CANAL.—Dr. G. v. Dall' Armi reports this interesting case, from the wards of the Julius Hospital at Würzburg, in the Munich *Aerztliches Intelligenz-Blatt* for September 5, 1876 (No. 36). Some notice of the case is contained in No. 48 of the same journal for 1875. The patient, E. Reinhardt, aged 20, had lost two sisters in infancy, one brother now suffers from phthisis, and her father was phthisical. She had measles at the age of 6 years. From September 1874 she suffered from a violent cough, with copious mucous sputa, and stabbing pains in the right side. In October she had pain in the right arm and back, which gradually subsided, giving place to loss of power in the right arm. Passive movements were not painful. Applications of electricity was followed by almost complete recovery of motor power, and she was discharged from the surgical wards; but the pain in the back returning again after a chill, she was readmitted as a patient. She suffered at the beginning of January 1875 with pains in the left arm also; in the lower extremities, back, and both arms, she had crawling feelings, cramps, and tremors. By the middle of January, she had almost complete paraplegia, then pain in the left side of the forehead. On coughing, the patient felt a distinct rattling in the right half of the chest. Night-sweats, especially at the back of the head, occurred after the new year, with want of sleep. The appetite remained good, but the bowels were constipated. On Feb. 2, 1875, she was transferred to the medical side. Her loss of flesh was most apparent in the arms, especially in the right forearm, and in the thenar and hypothenar eminences. The right arm, even above the elbow, was less fleshy than the left. On extending the hands, there was a good deal of tremor, most marked on the right side. Fibrillary cramps were noticed in the ball of the thumb. Her grasp was very feeble, but the ordinary movements of the arms were pretty fairly done. The lower extremities were better nourished than the upper, but their powers of motion were very imperfect, especially in the right leg. There was slight tremor, even when they were supported. Passive movements gave no pain, but passive flexion of the foot excited strong spasmodic contractions. From the angle of the ribs outwards, the patient had a numb feeling; for slight touches, the sensibility of this region was diminished; the right side more than the left in both cases. On both forearms the points of the compasses were felt as two at 4 or 5 centimètres apart (1.6 to 2 inches), and the same on the skin of the chest—more definitely on the left side. From the navel downwards, even at 15 to 20 centimètres (6 to 8 inches) apart, only one impression was generally felt. The reflex irritability on the lower part of the legs was found to be greatly increased, sharp pressure giving rise to severe muscular cramps. Faradic contractility was nowhere lost by the muscles, but it was felt less strongly in the ball of the right thumb than in the left. The pupils were somewhat dilated, particularly the right one; both acted fairly. The uvula deviated a little to the left. She bent the head forwards imperfectly.

Passive movements of this kind gave pain in the region of the first dorsal vertebra. The spinal column in the dorsal region was slightly bowed towards the left, the second dorsal vertebra was a little depressed, the first three dorsal vertebræ, especially the first, were tender on pressure over the spinous processes. On the left side, the supraclavicular region was somewhat flattened; the right corresponding region was contracted. There was more feeling of resistance (than on the left), and a tympanic tone (on percussion). Over the upper border of the trapezius, pressure elicited here and there a kind of crackle (*guetschen*), which the patient called a "rattling". On deep breathing, the left chest expanded better than the right. There was bronchial breathing at the right apex, with mucous *râles* in front; percussion there was painful. With the exception of the second sound over the pulmonary valves, which was louder than normal, the position and tones of the heart were not abnormal.

The patient could not help herself at all. She complained of great weakness, tremblings, cold chills, etc. Micturition was always painful. In the course of her disease, there was some improvement both in motion and sensation, especially on the left side, but the main features were unaltered. The crackling in the right suprascapular region was sometimes more evident, sometimes less so. At the end of February, at the level of the shoulder, it reached to the spinous process of the vertebra; whilst it could be felt downwards, though less plainly, to the inferior angle of the scapula. Cough, expectoration, and sweatings all became aggravated. The catamenia, absent since November 1874, returned on March 30th. The physical signs were as follows: on the right side of the chest, above, there was a tympanic tone, the pitch of which was altered by opening and shutting the mouth. At the third rib, the tone became deeper, and had a metallic character; which it retained down to the base of the lung. From the third rib, bronchial breathing was heard, with coarse metallic mucous *râles*, most at the base. Vocal resonance was intensified all over the right lung, particularly between the third and fifth ribs. Bronchophony was heard all over the right lung. Percussion behind was as in the front. The legs were very œdematous, particularly at the joints. Pyrexia and headache were frequent. On April 20, she complained of sore throat. The uvula, pharynx, etc., were swollen and red. On the 26th, she had much pain in the swollen legs. There were traces of albumen in the urine. On April 29, there were great dyspnoea, tracheal *râles*, respirations shallow and painful. On May 1, the patient was comatose. The sputa were copious. Pulse 150. Tongue coated and tremulous. On May 2, there was a very evident tympanic tone over the second and third ribs and thereabouts on the left side; breathing was bronchial there. The head seemed fixed. The lower extremities were motionless and painful. On May 4, she had a fresh attack of dyspnoea, with downfall of temperature. The pulse was quickened as before. She died on the 5th.

The temperature exhibited the type of a remittent continuous fever; the morning temperature varying from 99.6° F. to 101.2° F., the evening ones between 102.5° F. to 104° F., the latter figures being common. In one of the rigors, 105.8° F. was exceeded. From the 2nd of May to the 4th, the temperature fell, the morning temperature on the latter day being 96.8° F.

At the *post mortem* examination, the spinal canal, being laid open, exhibited granulations and mucopurulent fluid on the posterior bony wall. From the



third cervical to the second dorsal vertebra, similar granulations were found on the dura mater. The transverse processes of the seventh, sixth, and fourth cervical vertebrae, and the heads of the first, second, and third ribs, were bare of periosteum, and the bones carious and necrosed. In the right supra-scapular region, between the spine and the muscles, a cavity full of pus was discovered, extending above and below. On opening the membranes, the spinal cord was seen to be very pale in the upper part, but the veins in the cervical swelling were much gorged. The arachnoid was much thickened; the blood-vessels of the membranes were injected. A transverse section of the cord at the level of the second cervical vertebra, showed the anterior cornea to be far less prominent than usual; and, on both sides of the posterior commissure, there was yellowish discoloration. In the lower half of the cervical swelling, there was a greyish-yellow deposit in the left anterior cornu. Similar nodules and perivascular changes were found in the dorsal part of the cord—even in the nerves of the cauda equina, and lower portion of the cord. Pressure with the finger in the right supraclavicular region elicited cracklings. The right pleural cavity contained thin purulent fluid. The right lung was adherent at the apex. There was some pericardial effusion. The apex of the right lung was puckered, and exhibited a series or system of caverns (cavities). The upper lobe of this lung was airless, and studded with small nodules and cavities (*sic*). The cavity at the right apex was found to be in communication with the above-named abscess in the spinal canal. There were a little fluid in the left pleura, fatty degeneration of the liver, and a few grey nodules in the left lung, bed-sores on the loins, etc.

It is far more common for cavities in the lung to open into the pleura or into the pericardium than into the spinal canal. Cruvelhier gives one such case (*Gazette Hebdomadaire*, tome iii, 1856; Schmidt's *Jahrbücher*, Band xci, s. 69) in a woman, aged 57 years, in connection with the fourth and fifth dorsal vertebrae and fourth rib on the left side. In the case recorded here, the sputa were examined for fragments of bones, as was recommended by Friedreich (*Virchow's Archiv*, Band xxx), but none were found. The pains were doubtless due to neuritis and meningitis combined. Some symptoms (as those of the pupil) were most likely due to the sympathetic. The increased reflex irritability gave rise to a suspicion of analgesia. Rosenthal relates a case of analgesia with diseases of the vertebrae.

**CRON ON A FATAL CASE OF SCURVY.**—No. 48 of the *Berliner Klinische Wochenschrift* for 1876 contains the following case by Dr. Cron of Kaiserslautern. On the New Year's night of 1873-4, a dissipated carpenter, called Leppler, made a bet with his comrades for some beer, that he would enter the churchyard at midnight and would run three times round the Frenchman's Stone (a stone monument erected by Napoleon I), calling out loudly, for those outside to hear, that either God or the devil might fetch him, he cared not which, as he believed in neither. He carried out his purpose, to the horror of his less hardened companions. At the third time of calling out, his companions noted that his voice seemed suddenly choking, and that he ran for his life for the other side of the churchyard. They hastened to him, and found him pale, trembling, with bare head, and with his hair "standing on end", and only able to stammer a few words. They brought him home. Here at last he found his tongue, and

insisted on telling his aged mother, whom he roused from her slumbers. At first, she disbelieved the story; but, after some days, noting his pallor, his unusual quietness and loss of appetite, she recalled the story, and, on questioning him again, he said that when he called out the third time he felt gripped by the arm, and seized with an indescribable horror; he stood still a moment, but lacked courage to look round. On trying to get away over the wall, he declared that he was again seized by the coat, and robbed of his head-gear. Very probably he was really caught by some bushes, or the wind may have blown away his cap. But he thought it was the devil. The memory of this scene haunted him night and day, destroyed his rest and appetite, and all desire for society. Again and again he thought he felt the grip on the left arm, and each time he was seized with cold shiverings. This was the account given by himself, his mother, and his comrades shortly before his death, in the presence of his family, of the police, and of the protestant minister, the Rev. Mr. Vogt.

Dr. Cron was first asked to see his left arm about the middle of February. He found it hot, swollen, and somewhat reddened, especially about the elbow-joint, thus resembling an erysipelatous attack; but, in a day or two, the doctor's attention was attracted to the gums, which were swollen, spongy, and bleeding. Dr. Cron had seen many such cases in the convent at Laon during the French occupation of that place. The hygienic conditions were very bad. A whole family of six grown-up people slept in three beds in one small, damp, close room, without a fire or fireplace. In spite of antiscorbutic treatment, the right arm and face, and both ears, and afterwards other parts of the body, became attacked; he had pericardial effusion and cerebral symptoms, being comatose and delirious. From this state he rallied a little; but finally, exhausted by his inability to take nourishment, and by bleeding from the bowels and lungs—and constantly a prey to the most extreme mental anguish, in spite of all that the experienced clergyman could do to console him—he died. The left arm became quite mummified before his death, after this and other parts had exhibited the usual hæmorrhagic extravasations and appearance of bruising. The treatment consisted of appropriate antiscorbutic diet, and of the most approved remedies, including fresh fruits, citric acid, binoxolate of potash, opium, chlorate of potash, iron in the form of perchloride, ergotin, etc. The ergotin was partially successful in arresting the hæmorrhages, but the man was never able to take much nourishment, or to rally. As may be supposed, his neighbours believed it to be the work of the devil, and a special judgment of God; although the liberal-minded clergyman, even at the funeral, urged the lesson of charity taught by Him who once said, that "he who was without sin should cast the first stone" (S. John, chap. viii, v. 7).

Dr. Cron remarks that, notwithstanding some local conditions favouring scurvy, it has neither been endemic nor epidemic in his neighbourhood since the time of the Russian occupation in the first French war. This man's family all showed the same conditions of dieting, unhealthy locality, overcrowding, moisture, etc. Why, then, was he the only one to fall a victim to the disease? Doubtless, because the fright he had received produced a mental shock, which impaired his nutrition, and, indeed, prevented him not only from enjoying his food, but from eating it. It is noteworthy that, although deeply repentant,

he never recovered from the deep gloom and horror into which this event had thrown him.

VEIT ON THE DIAGNOSIS OF DIABETES MELLITUS, MORE PARTICULARLY IN ITS EARLY STAGES.—In Nos. 41 and 42 of the *Berliner Klinische Wochenschrift* for 1876, Dr. Veit discusses the importance of an early recognition of diabetes mellitus. He remarks that its onset is rarely sudden, whilst the fully developed disease is seldom if ever curable. Attention must be paid to the nervous symptoms which often precede. The urine must be examined in all cases of doubtful neurosis. Given the presence of sugar, we must endeavour to find out if the case be one of temporary glycosuria or not. Temporary glycosuria, or mellituria, may suddenly attack previously healthy persons after severe mental excitement or shock; after poisoning with carbonic oxide; after traumatic lesions, such as falls or blows upon the head; after injuries to the brain, and alcoholic excesses, etc. It is also found in a variety of diseases, as in sciatica, apoplexy, in lunatics, and in phthisical patients. Quincke found sugar in the urine after poisoning with morphia; and, in cirrhosis of the liver, Levinstein found the same reaction after morphia-poisoning, but would not affirm it to be due to sugar. Traces of sugar have been found in the urine of pregnancy and lactation.

Dr. Veit thinks the alterations of temper and character, great irritability, sleeplessness, extreme feelings of fatigue, disorders of vision, itching of the skin, pruritus pudendorum, especially from the vulvæ, and more or less persistent headaches, are often prodromata of diabetes mellitus. He, therefore, looks for sugar in the urine in all cases of obscure neuroses, persistent headache, etc., especially in corpulent persons; and his research has led to the discovery of eight cases of diabetes during the last two or three years which were previously unsuspected. The following are examples. In November 1871, he removed a small cyst from the back of a bookseller, aged 40. The wound did not heal very well, and he thought it well to examine the urine. It contained 2.66 per cent. of sugar. The only symptom of which he complained was occipital headache. He did not mention this till interrogated. Twelve years before, he had fallen on his head, from horseback, and so fractured his leg, that it was removed just below the knee. Recovery was interrupted by pyæmia, but in the end was pretty complete. In 1872, the sugar all vanished; but, after two years more, 7.6 per cent. of sugar appeared in the urine. From this time, till May 1876, the quantity decreased, so that it became only 0.7 per cent. Thirst was never a marked symptom, so that the case appears to have been one of the mild form of diabetes, of which Seegen speaks. In the next case, a very corpulent lady of Hebrew extraction, suffering from hysterical symptoms, for some time had examinations of the urine for sugar made, with negative results; but, in 1875, she had a boil on the face, and had severe headache, like occipital neuralgia. Examinations of the urine showed a specific gravity of 1025, and 1.20 per cent. of sugar, which soon rose to 1030 and 3.1 per cent. respectively. Just before her attack, she was greatly excited by the sudden madness of one brother, and the almost sudden death of another brother, who was insane. She had most of the symptoms of diabetes, though polyuria was not constant. Quinine and bromide of potassium, with small quantities of the Carlsbad waters, proved beneficial to her. Another case, a married woman, aged 30, was melancholy all through

gestation, had a dead child, and then became attacked with severe headaches, loss of sleep, slight œdema, and pruritus vulvæ, followed by sores on the tongue, dental caries, etc. The urine was found to have a specific gravity of 1038 and 4.56 per cent. of sugar (August 1874). A visit to Carlsbad and use of its waters restored her. The same waters, drunk elsewhere, did little or no good. Relapses occurred, and the same means proved useful; but in May 1876, the urine still contained sugar, and she still had some symptoms of nervous disease, etc. Dr. Veit quotes other cases, and shows that the slight or mild forms are sometimes fatal at early periods. One such case, first noted with a carbuncle, died of apoplexy. Most of these cases were treated with Carlsbad waters, and a partially restricted diet, with active exercise and much fresh air. Several other cases of boils, with sugar in the urine, are related in this paper.

[The Reporter has had several cases under his care in which diabetes mellitus was unsuspected until the urine was examined. In three or four of these, the specific gravity has not exceeded 1025 to 1030. The colour of the urine was almost normal, but the sugar amounted to from 3 to 6 per cent., and the quantity of urine passed was from eight to ten quarts daily. He had one such case under observation for about twelve years. The sugar never exceeded 7 per cent.; during most of the time it was about 4 or 5 per cent., and the specific gravity was for a long time about 1025, and the colour and appearance of the urine were almost those of health. This woman had cataracts in both eyes, and suffered severely from boils.—*Rep.*]

OTTO ON ALBUMINURIA AS A SYMPTOM OF (RECENT) EPILEPTIC ATTACKS.—In the *Berliner Klinische Wochenschrift* for Oct. 16 (No. 42), 1876, Dr. Otto of Pforzheim reviews the controversy between Huppert—whose paper in Virchow's *Archiv*, Band 59, affirmed that albumen was almost always present after an epileptic seizure, whether complete or abortive—and Karrer, who, in the weekly journal above quoted, denied the accuracy of Huppert's conclusions, on the grounds of experiments made on the urine of twelve epileptics. Huppert's test was boiling and nitric acid, and he trusted a good deal to turbidity after standing. Karrer used the more delicate test with ferro-cyanide of potassium. Dr. Otto now adduces 31 examinations of urine, using the same reactions as Karrer; the urine was taken immediately after the epileptic paroxysms, and he took care to satisfy himself that, in the intervals, the patient's urine was free from albumen. Two hours after the attack, the urine was again taken and tested. In the urine passed immediately after the fits, boiling and nitric acid never gave him any reaction indicating albumen. Ferro-cyanide of potassium gave a precipitate in three instances, very copiously once; and cloudy turbidity three times. In the urine taken two hours after the attack, boiling and nitric acid gave strong turbidity twice, and a bulky precipitate once; that tested with ferro-cyanide of potassium gave turbidity six times, and precipitates six times. Altogether, there were albuminous reactions 22 times in 31 cases, or 14 times with one reagent, four times with both; precipitates 12 times, turbidity 12 times. If the turbidity be allowed as a sign of albuminuria, it must still be said that it is not every attack of epilepsy which produces temporary albuminuria. If we reject mere turbidity and insist on a precipitate, we shall find that there were only 12 of the



epileptic seizures which were followed by albuminuria. The 31 attacks were in twelve patients; the 22 reactions in seven patients; so that there were five patients whose urine gave no traces of albumen after the paroxysms. On several occasions, in the same patient, the urine after one attack showed albumen, but showed none after another attack. The twelve cases with precipitates were in six patients. All those with albumen were severe and complete paroxysms. But so were several of those in which there was no albuminuria. After abortive attacks, no albumen was found in any case. The most severe attacks showed most albumen. The presence of this substance was doubtless due to the disturbed circulation and altered blood-pressure. The presence of albumen in the urine is, therefore, only a corroborative proof of such attacks, and its absence does not prove that there has been no paroxysm.

[The reporter, in commenting on this controversy, in a previous number, came to the same conclusion as Dr. Otto from his own experiments. He begs to suggest in future inquiries, that not less than three or four tests should be used. As nitric acid and boiling, and prussiate of potash have already been tried, why not use, 1, alcohol; 2, a saturated solution of picric acid; 3, Tidy and Méhu's test, *i.e.*, crystallised carbolic and glacial acetic acid in equal parts; and, 4, Millon's reagent, the acid nitrate of mercury?—*Rep.*]

W. BATHURST WOODMAN.

EICHHORST ON ACUTE ASCENDING PARALYSIS.—Dr. Hermann Eichhorst (Virchow's *Archiv*, Feb. 1877) relates the case of a woman who was an inmate of Professor Frerich's wards for intermittent fever, and who was suddenly seized with paralysis of the superficial peroneal nerve of the left leg, accompanied by deep-seated pain, formication, subjection, chilliness, and excessive sweating of the limb. The sensibility of the skin supplied by the cutaneous branches of the affected nerve soon disappeared. At first, the electric excitability of the muscles was not altered, but soon became lost. A week later, the profundus nerve became similarly affected; and, in three days, this was followed by paralysis of the left posterior tibial nerve. She became feverish; all four extremities became paralysed; complete blindness overtook her; respiration became irregular; the temperature reached 39.8 Cent. (103.64° Fahr.); and the patient died.

The *post mortem* examination showed nothing remarkable about the central nervous system, except redness and injection of the optic nerves; the right lung was oedematous; the heart was hypertrophied, dilated, and fatty; the kidneys presented some degree of cirrhosis, with dilatation of the pelvis of the left kidney. There were fibroid tumours in the uterus. Microscopical examination of the central nervous system threw no light upon the case; but the peripheral nerves were found injected and reddened; and the radial, ulnar, and median nerves of the left arm, when carefully examined, showed all stages of an acute neuritis, with lymphoid infiltration of the nerve and destruction of the nerve-tubes. The vessels of the nerve-sheaths were thickened, and peculiarly dull glistening; their nuclei were increased, and often lay together in groups of as many as three or five; their substance looked solid and homogeneous. There were heaps of lymphoid cells which followed the course of the vessels. No microscopical examination of the paralysed muscles was made.

This case differs from the type described by

Landry in the loss of cutaneous sensibility and muscular electro-contraction, but these obscure cases probably constitute a group of varying elements, the above being one possible form.

[The association with cirrhosis of the kidney, and a remarkable change of the vessels, appears to bring this case into the category of nervous affections, to which Sir W. Gull and Dr. Sutton have drawn attention.—*Rep.*]

WEGSCHEIDER ON TEMPERATURE IN FEBRILE DISEASE.—Dr. Hans Wegscheider (Virchow's *Archiv*, February 1877), writing on the distribution of temperature in febrile diseases, says:

1. There is no constant relation between the internal temperature, as measured in the axilla, with the general temperature of the surface. We saw the first rise, while the temperature between the toes fell, and *vice versa*.

2. Two completely symmetrical parts of the skin, as between the toes, show no proportionate course in their temperature; not only do they differ by not rising or falling to the same level, but one may rise while the other remains stationary or falls, and *vice versa*.

3. There is greater variation in the temperature-curves in the same part of the skin in the same person in fever than in health; but in fever there is a striking fall of temperature, notably lower than in the healthy state. However, in those people who suffer from cold feet, the temperature is often as low, or somewhat lower.

4. It follows from the last, that there is a greater difference in fever between the temperature of the axilla and that of the periphery than any changes of local temperature which may occur in health.

From all the foregoing, he concludes that the vessels of the skin in fever are in an abnormally irritable condition.

He did not find any noteworthy differences between the temperature of the two axillæ in unilateral affections of the thoracic organs. At any rate, in pleurisy there was no constant relation. In one case, in which both pleuræ were affected, the side with the greatest effusion had the lower temperature. His observations on pneumonia were too few to give a definite result, but the differences he observed were not so great as Landrieux has asserted.

R. SAUNDBY, M.B.

## RECENT PAPERS.

On so-called Pernicious Progressive Aneurism, in relation to a case observed at Berlin. (*Gazette Médicale de Paris*, June 16 and 23.) Typhoid Fever of Renal Type. By M. Hardy. (*L'Union Médicale*, June 23.)

Contribution to the Study of Certain Hæmorrhagic Ulcers of the Stomach. By M. F. Balzer. (*Revue Mensuelle de Médecine et de Chirurgie*, July 1877.)

Specificity and Spontaneity in Scurvy. By Dr. Revillout. (*Gazette des Hôpitaux*, June 28.)

Note on a Case of Progressive Muscular Atrophy, characterised at the outset by irresistible retropulsion. By Dr. A. Pierret. (*Revue Mensuelle de Médecine et de Chirurgie*, June 1877.)

On the Degrees of Anæmia. By Dr. George Hayem. (*L'Union Médicale*, June 23.)

On Epilepsy through Malformation of the Cranium. By Dr. Ch. Lasègue. (*Archives Générales de Médecine*.)

On Pure Mitral Stenosis. By Dr. Durosiez. (*Archives Générales de Médecine*, July 1877.)

Simulated Paralysis of the Limbs, with loss of sensibility, in a recaptured criminal. By Dr. Butterlin. (*L'Union Médicale*, June 26.)

New Remarks on the Operative Treatment of Purulent Collections in the Pleura. By Dr. V. Budde. (*Ugeskrift für Læger*, June 9 and 16.)

The Etiology of Diarrhœa. By Dr. C. H. Brunner. (*Berliner Klin. Wochenschrift*, June 18.)

Miliary Tuberculosis of the Pharynx. By Dr. Secchi. (*Ibid.*, June 25.)

Diagnosis of Simple Ulcer of the Stomach. By Dr. V. Gallard. (*L'Union Médicale*, June 12.)  
 Notable Improvement in a Case of Locomotor Ataxy, by the application of Hydrotherapy. By Dr. Emile Duval. (*Paris Médical*, June 14.)  
 On Ulcer of the Stomach. By M. G. Sée. (*Revue de Thérapeutique Médico-Chirurgicale*, June 15.)  
 On the action of Metals on Patients thrown into an Hysterical Condition. By M. Prosper Despine. (*Gazette Méd. de Paris*, June 30.)  
 Syphilitic Nurses and Nurslings. By Dr. Alfred Fournier. (*L'Union Médicale*, June 19 and 26.)

## SURGERY.

OGSTON ON THE OPERATIVE TREATMENT OF GENU VALGUM.—The following case, described by Dr. A. Ogston, in the *Edinburgh Medical Journal* for April, illustrates, in a bad case of knock-knee, a means of treatment hitherto untried, but which yielded on both legs results so perfect as to warrant its being recommended in similar cases.

The patient was 18 years of age; and, since an attack of typhus when 7 years old, the deformity began to develop itself and to present a most exaggerated appearance, and all treatment by splints or apparatus was utterly futile.

The patient was chloroformed, and the left knee flexed as far as possible, and the thigh turned outwards. A long and strong tenotomy-knife (Adams's) was introduced through the skin, three and a half inches above the tip of the internal condyle on the inner side of the thigh, and so far back as to be opposite the ridge of bone running between the linea aspera and the condyle. Its blade was carried forwards, downwards, and outwards, over the front of the femur, with its cutting edge directed to the bone. When its point could be felt under the skin, in the groove between the condyles where the patella would normally have been lying in the flexed position of the limb, the cutting edge was pressed against the bone, and the soft parts and periosteum divided by one slow firm movement in withdrawing the knife. The external wound thus made was about one third of an inch long, and formed the entrance to a subcutaneous tunnel, running obliquely over the front of the femur, and ending in the cavity of the joint. Adams's saw for subcutaneous division of the neck of the femur was introduced into the tunnel, and the condyle sawn off by directing the edge of the saw straight backwards. The position of the saw could be exactly controlled, by feeling its point working gradually backwards in the groove between the condyles. As soon as it was estimated that the condyle was almost entirely separated, and that the saw had arrived near the popliteal space, the saw was withdrawn. The knee was completely extended, and then with the hands, and the operator's knee as a fulcrum, the patient's knee was forcibly straightened by bending the leg inwards. The remaining connections of the condyle with the femur gave way with a crack on the application of very moderate force, and instantly the leg became as straight as a healthy limb, and could even be put in a somewhat bandy (*genu varum*) position. The whole of the operation was conducted under carbolic spray, with a minute observance of Lister's antiseptic precautions, and the limb was put up in antiseptic dressings. It was then simply bandaged to a Liston's long splint, the thigh and leg being kept in the same line by pads, and the boy was placed upon a hard mattress.

The reaction was almost *nil*. The temperature, carefully taken, never rose above 99.8°. The joint,

at first filled with blood, never became hot or tender, and on June 2 the splint and bandages were discontinued and passive motions commenced.

On June 6, the other knee was operated on in the same manner, with an equally favourable result, the temperature never rising above 100°. The splint and bandages were removed on June 21, and passive movements commenced.

The movements were continued on both limbs for a month, and were at first attended by crackling and grating, as if from rough displaced cartilages, whenever the knees were flexed to a right angle. There was never any pain, and the movements became steadily smoother until, on July 9, seven and a half weeks after the operation on the left knee, and less than five weeks after that on the right knee, he was allowed to rise and walk. The movements speedily became normal, and he was dismissed, walking perfectly, on July 21. The patellæ were even then tending to assume a more normal position.

EDWARD BELLAMY.

PACI ON A CASE OF ABSCESS OF THE LIVER, WITH SUCCESSFUL OPERATION.—This case is reported and commented on in the *Commentario Clinico di Pisa*, by Dr. Agostino Paci, Surgeon to the Hospital of Sarzana, who here writes a most able paper on the causes of, and various operative methods employed in, hepatic abscess.

The patient was a widow, aged 65, with a sound family history. She married at 21, and, at 24, suffered from pericarditis and metritis; at 33 she had hepatitis, for which she was repeatedly bled. The principal symptom was pain in the right hypochondrium, which lasted for years, but always yielded to leeching. In 1859, at the age of 48, she recovered, and passed several years in good health. Seven years later, gastroduodenal catarrh came on and led to jaundice, lasting a couple of months. After that, she suffered gastralgia and colic repeatedly. Eventually, in 1876, at the age of 65, she was seized with sudden and severe pain in the right hypochondrium, aggravated by coughing and breathing, and considered due to hepatitis.

The case was carefully watched for two months; the diagnosis of abscess was established more and more; and, finally, operation was decided upon. The procedure chosen was that of incision just outside the nipple line below the level of the eighth rib, to an extent of two inches, made gradually through the layers of the abdominal wall. The parietal peritoneum was found to be adherent to the liver at the spot, and much greenish creamy pus escaped. The orifice was plugged with rag, covered with a "linseed plaster" bound on with a roller. The fever declined at once from 103 to 100, but the discharge of pus continued in great quantity. Profuse sweatings occurred during sleep, and continued a month, during which time several long fibrous sloughs were pulled out of the wound. In five and a half weeks the wound was cicatrised, and the patient convalescent, suffering no more inconvenience than some sensation of dragging at the spot incised, no doubt due to adhesion, and being, it was hoped, of a temporary nature.

[Perhaps it may not be amiss to reflect for an instant upon the effects of linseed poulticing and plugging wounds with lint. The latter alone prevents the exit of the discharge, either partially or totally, and every clinical surgeon knows that inflammation is aggravated when the distention of any abscess or other cyst remains unrelieved. The former, a hot oily application, draws blood to the part, and also



increases the inflammation. The pus, or whatever fluid be thus momentarily set free, is once more confined within its cyst, but with the additional feature that decomposition is at once set up in it by exposure. The outward stream, which the natural collapse of incised parts would favour when let alone, is thus arrested by the plug; septic conditions are gratuitously set up in the retained fluid; and, as if to leave nothing undone in the artificial inflammation, a hot, fat, impervious poultice is laid over all.

The least that can happen is a profuse suppuration with corresponding fever, with or without sloughing. If the constitutional state be bad enough, septicæmia, phlebitis and pyæmia, or erysipelas will occur; but all these possibilities notwithstanding, it is fortunate that many patients survive in spite of the risks incurred.

There are surgeons without number who are never weary of dinning into our ears, "avoid filthy poultices; secure the perfect drainage of your wound"; to their own everlasting credit; yet the practice continues even in high places. This complaint is directed against methods, not against persons, much less against the able gentleman who has so faithfully reported the above case; but it is a complaint for which there is still much need in the interests of antiseptic surgery, which is really independent of disinfectants and coverings of all kinds.

If the orifice of this wound had been left without immediate covering, and had been simply greased to prevent evaporation and too early scabbing, suppuration would rapidly have ceased, probably within a week, and given place to pellucid serous ooze, and to more speedy but non-suppurative granulation.

It is the nature of these things to heal, and the duty of the surgeon mainly to avoid hindering nature's process (by keeping his fingers away), and only to supplement it, which he occasionally can, to the small degree here indicated.—*Rep.*]

ORSOLINI ON A DEEP EXTENSIVE HORIZONTAL WOUND OF THE THYROID-HYOID REGION, MADE IN A SUICIDAL EFFORT.—In the *Commentario Clinico di Pisa*, Dr. G. Orsolini of Lucca relates, under the above title, a case which, in many large towns, may be regarded as of almost every day occurrence, under the prosaic appellation of "cut throat".

The victim was a married woman, aged 48, who, in a fit of suicidal mania, employed a well-whetted scythe in an unsuccessful attempt upon her life. Her throat was cut horizontally between the hyoid bone and thyroid cartilage, exposing the back of the fauces, and dividing the epiglottis. She was brought to hospital a day after the injury, and placed in bed with the neck flexed. The wound was simply covered with a greased rag, sutures were avoided, and the position of the patient carefully watched by attendants. Whatever bleeding had occurred had now ceased. The power of swallowing returned on the fourth day. The wound closed after the expiration of ten or twelve days, and was healed in a few more. Eventually, deglutition and vocalisation returned in perfection, and, after twenty-one days, the woman was sent to an asylum. She had previously been treated for syphilis in the same hospital, and at the time of the self-inflicted injury was found to have double lenticular cataract. The rest of the account, which occupies six pages, is a minutely detailed description of what the surgeon saw through the wound.

[This is a case which well exemplifies the natural

progress of a complicated wound towards complete recovery under rational surgical supervision, but in the absence of surgical meddling. It supplies a good text for a clinical lecture, and here lies its interest, which, in other respects, is common-place.—*Rep.*]

VITTADINI ON A CASE OF EXTRAORDINARY HYPERTROPHY OF THE LOWER JAW IN A YOUNG WOMAN.—Dr. Vittadini describes, in the *Annali Universali di Med. e di Chir.* for March 1877, the case of a woman who, in her twenty-first year, suffered from diffuse submaxillary lymphadenitis, which after prolonged treatment disappeared, but resulted in a slight swelling of the submaxillary soft parts, the effect of which was to give to the lower margin of the lower jaw a puffed-out appearance to the extent of a deformity. Two years later she married, and, after two more, was confined of a healthy child. She only lived six months more, at the end of which she suffered from chronic metoperitonitis, for which she was admitted into the hospital of Castelnuovo Scrivia, where she died at the age of 26.

The lower jaw was removed after death, and found to be greatly thickened, especially in the body of the bone, though the form was retained. It weighed 9½ ounces, or about double the normal. The various fossæ and foramina were obliterated, also the oblique lines; and the anterior surface projected to the level of the alveolar margin. The teeth were good, regular, and fourteen in number; the third molars being absent. A section was made, and the interior found of ivory consistence throughout. The nature of the enlargement is thus considered a simple hypertrophy, all acquired during the five or six years in which the patient suffered from submaxillary inflammation.

TIZZONI AND PARONA ON LIPOMA OF THE TONGUE.—The authors describe in the *Annali Universali di Medicina e di Chirurgia* for March, the case of Professor C. Gianni, aged 74, who had had a growth about a year, situated under the anterior and under surface of the tongue, on the right side. When he had had it six months it was of the size of a filbert, and, thinking it was a collection of pus, he punctured it himself, but let out only a little blood.

The tumour then rapidly grew, and attained the size of a large walnut, becoming very inconvenient, and causing constant spitting of saliva. Removal was effected by enucleation, and the nature of the growth was ascertained to be that of an ordinary soft lipoma. Microscopic examination confirmed the naked eye opinion. The patient did well. A *résumé* is given of all the recorded cases of lipoma linguæ.

RUSHTON PARKER.

PUTNAM ON A CASE OF SECTION OF THE MEDIAN AND ULNAR NERVES.—Dr. Putnam's paper (*Boston Medical and Surgical Journal*, March 22) on the above subject is illustrated by two diagrams, and is based on examinations especially protracted and minute. About two months after the division of the nerves just above the wrist by a pane of glass, the following were some of the results noticed.

All the muscles of the hand were found incapable of responding to voluntary impulses, or to the induced current; while all responded with especial readiness, and with the familiar "wave-like" motion, to the stimulus of weak galvanic currents, particularly when the positive pole was applied over them. Three distinct zones could be made out, representing various degrees of anæsthesia. 1. Where sensation was absolutely lost. 2. Where the sense of touch

was lost, while strong impressions were still felt. For the production of powerful excitations, the skin was pricked deeply with a needle, or was touched with a *single wire*, connected with one pole of an induction battery, the other pole being represented by a pad placed on the moistened skin. For estimating the sense of touch, a feather was used, or, what seems equally good, and often more convenient, a bit of twine. 3. Where the sensibility of the skin was only slightly modified. For estimating these points, the aësthesiometer used by Dr. Mitchell was employed, but with less satisfactory results. It was found that, in this case, whether normally or not, a branch from the dorsal branch of the ulnar supplied in part the whole palmar surface of the first phalanx of the little finger. Letiévant's statement, that a vibratory irritation, such as may be produced by drawing the point of a pin or a stiff piece of paper across the skin, may be transmitted through anæsthetic parts to the still healthy filaments of adjacent regions, and give rise to an indefinite feeling which may be mistaken for a sign of preserved local sensibility, could be distinctly confirmed in this case with regard to the end of the forefinger. On the other hand, the impression left by Letiévant's statement, namely, that if sufficiently strong excitations be chosen, the space within which the anæsthesia is complete, will generally be found to be quite small, was not strengthened by the examination of this case. Furthermore, the rule affirmed by Arloing and Tripier with regard to dogs, that the whole skin over each paw is supplied with some degree of sensation by each of the main nerves of the limb, evidently does not hold for man. W. H. A. JACOBSON.

**BROWNE ON THE CAUSES OF DYSPNŒA IN SUFFOCATIVE GOÏTRE.**—In the *American Journal of Medical Sciences* for April 1877, is a paper by Mr. Lennox Browne, on the causes of dyspnœa in cases of suffocative bronchocele, and on the surgical treatment most advisable. The paper was prompted by one which appeared in a recent number of the same journal by Dr. John B. Roberts, on a case of acute bronchocele producing fatal dyspnœa, the cause of which dyspnœa was very obscure. Mr. Browne suggests that the respiratory distress in these cases is caused by the interruption in rhythm of the involuntary muscles of the trachea. In all cases of suffocative goitre, there is either—as in the substernal variety—resistance to outward expansion, or, as in that under present consideration, bulging inwards of the tracheal wall. The author then quotes a case, which he exhibited at the Pathological Society, in which a lymphoma caused such displacement of the larynx and trachea that the right vocal cord was seen to be pressed well to the left of the median line, and yet there was not the slightest dyspnœa, and, on which he remarked, “it is somewhat rare to see such displacement of the trachea with no disturbance of the respiration. It is well known that while a very slight substernal goitre, or other cause for pressure or constriction of the windpipe low down in the neck, will cause distressing dyspnœa, a very considerable enlargement of the isthmus of one lobe of the thyroid will occasion no respiratory inconvenience; but, if both lateral lobes of the gland be at all enlarged so as to embrace the windpipe, difficulty of respiration and of deglutition are at once observed”. Another case is also mentioned, exhibited before the same society, in which there was “enlargement of the thyroid, principally of the right lobe, displacing the trachea, and interfering

with its form”. The laryngoscope showed the inner wall of the trachea pushed in so as to diminish the calibre of the canal, and, in this case, respiration was seriously impeded. Other cases are also mentioned, all supporting the same view, viz., that the main cause of the trouble is tracheal pressure; and this, also, the author considers to be supported by the state of things revealed by the necropsy in Dr. Roberts's case. Mr. Browne then makes a few remarks with regard to the sympathetic derangement in these cases. He is inclined to agree with Dr. Roberts in thinking that it is more probable that the thyroid is a blood-reservoir preventing cerebral congestion, than that it acts, when enlarged, by pressure on the carotids, modifying their impulse; for, as a matter of fact, these arteries are always pushed back in cases of goitre, and are never pressed upon by thyroid enlargement. As to *treatment*, the author strongly urges the importance of the early introduction of a seton as preferable to all other modes. “It is devoid of danger; it cannot impede or negative further operative measures of a more radical character, if they be deemed necessary; and, I believe, the practice will be found universally successful: 1. In giving immediate relief to the respiratory distress; 2. In producing suppuration and dispersion of the tumour.” In the cystic form, Mackenzie's plan of tapping and then injecting perchloride of iron leaves nothing to be desired. In very large cysts, after having induced suppuration, the author would be inclined to treat them by Mr. Callender's method of distension with carbolic solution.

W. DOUGLAS HEMMING.

**NEET ON CHLOROFORM AND ETHER.**—At the meeting of the Central Kentucky Medical Association, on January 17, 1877, Dr. Neet of Versailles (U. S.) read a paper on Chloroform and Ether. The report in the *Louisville Journal* says, “The vaso-motor disturbance is most marked in chloroform narcosis if not very dilute, and this leads, he said, to paralysis of the vaso-motor centres, with consequent capillary congestion and threatened stasis. In ether, this portion of the vascular system is most stimulated under full anæsthesia, with contraction of the vessels, and with increased rather than diminished tone, and their propulsive power remains vigorous until some other vital power is almost wholly compromised, and hence, he said, paralysis of the sympathetic is one of the indications of approaching death in chloroform narcosis, while in ether such does not occur primarily.”

He considered chronic alcoholism the most unfavourable condition for anæsthetics. After describing the usual means of resuscitation, he mentions the introduction of ice into the rectum. He advised the use of an opiate before the anæsthetic. He preferred Skinner's inhaler for chloroform, and Allis's for ether. He referred to the published records of the disastrous consequences resulting from the reckless use of chloroform and ether, and said that, with the present existing data, no one could safely claim unconditional superiority for either drug over the other.

In the course of the discussion, Dr. Dunlop said he had found the addition of alcohol to chloroform very satisfactory. Dr. Spillman had found ether impracticable in many cases, and thought safety was to be secured by not giving so much as to produce loss of consciousness. Dr. Gaillard, referring to the history of the subject, said that Warren and others had used ether for the relief of pain twenty years before Morton



used it in surgical operations, and that chloroform had been repeatedly used by Guthrie of Sackett's Harbor before Simpson's attention was directed to it. He preferred chloroform to ether, and said that, by the occasional use of ammonia on the towel, the heart can be sustained in effective action during the longest operations. He thought it unsafe to give ether or chloroform in dental operations in any other than the prone position.

[It is remarkable that at this American meeting all the speakers were opposed to the use of ether and in favour of that of chloroform.—*Rep.*]

J. T. CLOVER.

BLUM ON TRAUMATIC SHOCK. — Blum (*Archives Médicales*, 1876) describes traumatic shock as the prostration and collapse which follow severe traumatic injuries. The synonyms for this condition are, or have been, extraordinary sensitiveness, lethargy, exhaustion, commotion, collapse, syncope, traumatic stupor, shock. The author believes that the phenomena characteristic of shock are pallor, loss of consciousness, and impeded respiration and circulation, and he explains them by the sudden arrest of the action of the heart, analogous to that which occurs when the pneumogastric, the controlling nerve of the heart, is experimentally galvanised. And it is an irritation of the pneumogastric, whether it be the direct action of the shock upon the bulb, or whether it be a reflex action through the nerves of organic life. Physiological experiment also leads us to believe that the irritation of the nerves of organic life aids the action of the controlling nerves. That chloroform and surgical interference are contra-indicated, are the two chief therapeutic considerations to bear in mind.

A. SHEWEN, M.D.

BOULAY ON THE TREATMENT OF VESICO-VAGINAL FISTULA. — Boulay (*Thèse de Paris*, 1876), following the advice of Verneuil, employs the galvanic cautery, in place of the bistoury, to refresh the surfaces of the fistulous opening. He relates sixteen operations with very exact details, and mentions that Luigi (*Il Movimento Medico-Chirurgico*) has also employed these means with great success. The advantages which he claims for this method are, the absence of bleeding, and the great facility it affords for placing the ligatures; he alleges, also, the diminution of the risk of purulent infection, erysipelas, and peritonitis. He adduces statistics in support of his assertion of the harmlessness of the method. The only inconvenience is the multiplicity of the operative sittings; but this is, he considers, compensated by the rapidity and their facility.

BRAMWELL ON TREATMENT OF WOUNDS OF THE RADIAL AND ULNAR ARTERIES BY ACUPRESSURE. — In a short paper in the *Edinburgh Medical Journal* for March, Dr. J. P. Bramwell says that the surgeons of the Perth Infirmary have, for some time, employed acupressure instead of ligature in case of wound of the radial and ulnar arteries. This plan is easy of performance, and can be quickly carried out. The acupressure needle is thrust down close to the artery on its ulnar aspect, and its point brought out a considerable distance from the side of the vessel on its radial aspect. In this way the collateral vessels seem to be caught and strangled, so as to prevent the blood from finding its way into the distal end of the artery. Where the wound in the wrist is very free he prefers two needles, one proximal, the other distal; and each should be

inserted close to the artery, and the point brought out close on the other side. The needles are then "kinched" with a strong thread, twisted round into a figure of eight, and drawn tight. A bandage may then be applied, or simply a cold-water rag. In four or five days the needles may be removed with safety; but, if any fear of fresh hæmorrhage be entertained, the "kinching" thread may be cut, and the needles left for twenty-four or forty-eight hours longer.

TREATMENT OF ANEURISM BY MODIFIED COMPRESSION. — In a note of practice at the Bellevue Hospital in the *New York Medical Journal* for April, it is stated that a form of treatment of aneurism by compression has been recently practised, which, although not new, deserves notice from the beneficial results which followed its use. The principle of it is to suspend a shot-bag by India-rubber in such a manner that pressure will be caused on the aneurism in the following way. A bag containing eight or ten pounds of shot is suspended from a support by means of India-rubber tubing, in such a manner that, for four or five days, the pulsation of the artery is sufficient to raise the weight. At the end of that time the bag is lowered, so that it completely occludes the vessel. It has been found that in two cases in which the method was used, complete consolidation took place in ten days. An interesting fact noticed was that only slight pain was complained of during the time that the weight was in position. The bag is rendered steady by a rod of wood which is buried in the shot and extends upwards, and plays through metallic ferules in such a manner that motion can only take place in a vertical direction. The bag is still further kept in position by a strip of bandage which is attached to it on each side, and passes around the circumference of the limb.

BOMPAIRE ON THE TREATMENT OF MALIGNANT PUSTULE. — Bompairé has frequently observed anthrocid affections amongst the numerous tanners living at Millau (Aveyron). He recommends, in the *Montpellier Medical* for January 1877, the following treatment. 1. In slight forms of malignant pustule, when the surgeon has been called in at the beginning, a simple cauterisation with Vienna paste is sufficient, and Dr. Bompairé believes that it stops the disease in the majority of cases. 2. When the tumour has acquired a certain development, when the general symptoms have shown themselves in the usual way towards the fourth or fifth day, cauterisation should be preceded by a crucial incision through, as far as possible, the whole depth of the slough. 3. Finally, when medical assistance has been called in late, when the malignant pustule has reached the seventh or eighth day, and œdema has invaded a large surface, action must be taken even when the general symptoms are very serious, and life itself seems in danger. Observation shows that, in these cases, the excision of the slough, combined with vigorous cauterisation with sulphuric acid, may be of great service and save the patient. Antiseptics, such as carbolic and salicylic acid and tonics, should be administered internally.

#### RECENT PAPERS.

Enchondroma of the Parotid Region: Removal by the Linear Ecraseur: Healing by First Intention. By Dr. Bardy-Delisle. (*L'Union Médicale*, June 21.)

Researches on the Ligature of the Superficial Palmar Arch. By M. Felix Guyon. (*Revue Mensuelle de Médecine et de Chirurgie*, June 1877.)

On Union by First Intention in Amputation. By Dr. Letiévant. (*Lyon Médical*, June 24.)  
 Subcapsular Friction and Accidental Serous Bursa under the Scapula. By Dr. Terillon. (*Archives Générales de Médecine*, July 1877.)  
 Chondro-Sarcoma of the Parotid. By M. Lannelongue. (*La Province Médicale*, June 13.)  
 On a New Method of Dressing Amputation-Wounds. By Dr. Paquet. (*Paris Médical*, June 14.)  
 On Benign Tumours of the Breast. By M. Gosselin. (*Revue de Thérapeutique*, June 15.)  
 On Treatment of Hæmorrhoids by Forced Dilatation of the Sphincter Ani. By Dr. S. Fantau. (*Ibid.*)  
 Case of Extirpation of the Kidney. By Dr. G. Langenbach. (*Berliner Klinische Wochenschrift*, June 11.)  
 Irreducible Luxation of the Hip: Incision unsuccessful: Reduction: Recovery. By Dr. H. R. Ranke. (*Ibid.*, June 18.)  
 The Radical Cure of Hernia. By Dr. V. Czerny. (*Wiener Medizinische Wochenschrift*, June 9 and 16.)  
 Operative Treatment of Diverticulum of the Esophagus. By Dr. K. Nikaladoni. (*Ibid.*, June 23 and 30; July 7.)  
 The Surgical Function of the Omentum. By Dr. K. McLeod. (*Edinburgh Medical Journal*, July.)

## MATERIA MEDICA AND THERAPEUTICS.

VALLENDER ON THE PREVENTION OF EPILEPTIC FITS, BY SUBCUTANEOUS INJECTION OF APO-MORPHIA.—In the *Berliner Klinische Wochenschrift* for April 2nd, Dr. E. Vallender relates three cases in which apomorphia was subcutaneously injected during the aura preceding the fits, and in all three of which it always had the effect either of preventing the seizure altogether or of materially diminishing its severity and duration. All the three patients were women.

A. K., aged 20, was subject to very frequent epileptic attacks (ten to fifteen in the twenty-four hours); each fit was preceded by an aura consisting of a sensation of heat and considerable pain, commencing in the region of the stomach and spreading over the upper part of the body; after a free interval of only a few minutes the seizure took place. On the first occasion when the treatment was adopted about one-fifteenth of a grain of apomorphia, dissolved in six minims of water, was injected during the aura; instead of the usual strong fit, the patient was for several minutes in a condition like a faint, with loss of consciousness. From this time the injections were repeated as often as possible during the aura, sometimes as often as five times a day; the effect was always evident, and the duration of the attacks greatly diminished. Only one-thirtieth of a grain was administered at a time; this caused nausea, but no sickness. When the injection was omitted the fit always occurred with its previous severity. After several weeks the seizures steadily diminished in frequency, and even when the injection was omitted only a slight fit occurred. During three weeks the patient only suffered from three slight attacks of *petit mal*, and these were without any previous aura. The treatment was now suspended for a fortnight, during which time the fits again steadily increased in frequency and severity; with the resumption of the treatment improvement again took place, until the fits ultimately ceased, and the patient has now been two months without any attack.

It seemed probable that the beneficial action of the apomorphia in the above case was owing to its specification on the stomach, as the aura evidently commenced in the vagus nerve; but that the drug is also effective when the aura has another origin is proved by the two following cases.

E. B., 22, epileptic from infancy, had lately suffered from several fits daily, each of which lasted an unusually long time. The aura consisted in a feel-

ing of giddiness, and was separated by a distinct, although very short interval, from the commencement of the fit. Under these circumstances it was difficult to inject at the right time, *i.e.*, during the aura; but when this was done the duration of the attack was always greatly lessened. The fits became gradually less frequent, and after some weeks' treatment the patient has had no fit for four weeks.

A. P., 44, had been epileptic for many years; the aura which precedes the fit by about a quarter of an hour, consisted in a prickling sensation, commencing in the toes and extending upwards, to which was added palpitation of the heart and a feeling of constriction round the chest. Whenever injections were made during the aura the fit did not take place at all. The patient did not remain long enough under treatment for any observation to be made as to its effect on the frequency of the attacks.

The author says that when the injection was given at the proper time, *i.e.*, during the aura, it was never without effect; and, as will be seen from the above cases, it acted best where the interval between the aura and the fit was longest. One-thirtieth of a grain was the regular quantity of apomorphia injected on each occasion, very rarely more; no bad results were observed, notwithstanding the frequency of the injections. C. W. S. COBBOLD, M.D.

SIZARET ON THE EMPLOYMENT OF THE CESOPHAGEAL SOUND IN THE FORCED ALIMENTATION OF THE INSANE.—Forced alimentation offers many difficulties presented by the obstinate opposition of the patients, and of all instruments devised for this purpose, Dr. Sizaret (*Annales Médico-Psychologiques*, March 1877) thinks the œsophageal sound introduced through the nose is to be preferred, because it alone has the power to overcome all difficulties. Yet the œsophageal sound is not without inconvenience, its employment is always a delicate operation; it has frequently caused grave accidents, rents of the pharynx, the passage of the alimentary liquid into the trachea; and its introduction, in certain circumstances, becomes impossible. Dr. Grasse gives the following directions for this operation. Separate the teeth of the patient by means of a spoon or wedge of wood, which must be held by an assistant; taking the end of the sound (previously introduced into the nose as far as the level of the pharynx) with the right hand, introduce the index finger of the left hand into the mouth to guide the sound, direct its extremity along the posterior wall of the pharynx, and facilitate thus its passage into the œsophagus; then remove the wedge and inject the food. As this manœuvre is a little complicated and quite impracticable, as in certain patients it is impossible to separate the teeth without risk of injury, Dr. Sizaret proposes to substitute the following, which he has found convenient, easy of execution, and sure in its results. Introduce the sound by the nose; when it has arrived at the entrance of the pharynx, an assistant injects quickly a small syringeful of brandy into the sound. This liquid, irritating but inoffensive, produces immediately a reflex movement of deglutition, which carries the sound slowly, pushed at the same time by the operator. The sound is literally swallowed.

CHARLES ALDRIDGE, M.D.

LAWSON ON HYOSCYAMINE.—Dr. Robert Lawson, of the third Middlesex Asylum, publishes in the sixth volume of the *West Riding Asylum Medical Reports* a further contribution on hyoscyamine in



the treatment of some diseases of the insane. In summing up the evidence supplied by numerous cases detailed in the body of his paper, Dr. Lawson states that hyoscyamine appears to him to possess great value in the treatment of cases in which aggressive and destructive excitement is the leading symptom of insanity as well as in cases of chronic mania with special delusions of suspicion, mania of a subacute or recurrent form, and simple mania, characterised from the first more by agitation than excitement, due to the existence of obscure delusions and hallucinations. In wilful or impulsive destructiveness, he finds the drug in single large or repeated small doses exceedingly effective in curbing that expensive propensity in maniacs and demented. The following principles are arrived at after prolonged observation of the use of the drug.

1. Hyoscyamine rarely causes a decided exanthematous eruption.

2. Very rarely (in two cases out of many hundreds) it causes hæmatemesis.

3. In small continuous doses it does not produce in suitable cases dryness of the throat or tongue, and does not interfere with the appetite or cause nocturnal restlessness.

4. In cases of retention of urine occurring in the progress of central nervous disease, and due evidently to a spasmodic affection of the sphincter of the bladder, hyoscyamine produces free and voluntary diuresis.

5. Small doses act powerfully in cases of locomotor ataxy, and other conditions characterised by frequently interrupted nervous discharges, and generally thought to be associated with sclerosis.

6. A certain tolerance is established in man as well as in the lower animals by the frequent administration of the drug.

Dr. Lawson also specifies certain cautions which experience has determined with regard to the use of hyoscyamine.

1. In the aged and in patients showing marked signs of arterial disease, the drug should be given with great caution.

2. It should be freely diluted.

3. That it should be avoided in cases of furious mania where artificial feeding is likely to be required for some time.

The drug employed in these observations was Merck's extractive principle, as supplied by Messrs. Harvey, Reynolds and Co., of Leeds.

WM. STIRLING, D.Sc., M.D.

OKA AND HARADA ON THE USE OF THE FARADIC CURRENT (INDUCTION CURRENT) IN CERTAIN FORMS OF DILATATION OF THE STOMACH.—No. 44 of the *Berliner Klinische Wochenschrift*, October 30, 1876, contains a paper on this subject by the Drs. G. Oka and J. Harada, who are assistants to Dr. Wernich at the Academy Hospital in Yedo (Japan). They remark that the use of the stomach-pump is too complicated a proceeding in the commoner or slighter forms of this disease (or symptom). They were first recommended to use faradisation by Dr. Wernich, who showed them a paper by Fürstner recommending it, in the journal above named, No. 11 for 1876. Dilatation of the stomach often occurs in Japan. Europeans in moist, warm, subtropical climates often suffer from it, and seem to get good from alcohol and nux-vomica. These remedies do not suit the Japanese. There are a chlorotic form, common in puberty; and a special form, common in Japan and other neighbouring

islands, which seems the initial stage of kakke or beriberi. The cases submitted to this treatment were 13 in all, as follows: three of chronic gastric catarrh, with slight atony; two of old gastric ulcer with partial dilatation; four of chronic constitutional dyspepsia with atonic stomach; four of hysteria with chronic dilatation of stomach. Five were quite cured, and two derived no benefit; but one of these was complicated with diabetes and chronic gastric catarrh; the other was chronic gastric catarrh with hysteria. Details of the cured cases are given. The Japanese are said to eat much indigestible food, or slow of digestion from its nature or from the mode of preparation.

W. BATHURST WOODMAN.

GUILLON ON THE TREATMENT OF ANGINA AND MEMBRANOUS CROUP, BY INSUFFLATIONS OF NITRATE OF SILVER.—Guillon has treated diphtheritic pharyngitis by insufflations of nitrate of silver. He proceeds as follows (*Gazette Médicale de l'Algérie*, May 20, 1877). Pure nitrate of silver is dried by exposure in a silver spoon to a proper degree of heat over the flame of a candle or some live coals. The insufflator, by the aid of which the powder is projected into the mouth as far as the bronchi, is composed—1, of a wooden cylinder, in which the powder is placed; 2, of an India-rubber bag, which acts as a bellows; 3, of two tubes, one a straight one, conducting the powder in a direct line to the pharynx, the other curved downwards, to direct it towards the larynx. It is important that the portion of the cylinder to which the india-rubber bag is fixed should have sufficiently large apertures for the air to enter it quickly, and to be expelled from it with equal ease, so as to drive the powder outwards. The other part, to which the duplicate tubes are adapted, should be fitted with a small sieve, so that the powder may be properly divided when it leaves the instrument, and not fall in a mass on the affected part. During this rapid and simple operation the patient's head should be kept immovable, and thrown backwards. The operator, placed in front of and a little to the right of him, depresses the tongue with a spoon held in the left hand, and holds the insufflator with the other hand. Rapidly compressing the india-rubber bag, and pressing against the superior dental arch with the right hand tube, he projects the powder on the diphtheritic membranes and on the mucous membrane of the pharynx above and below, so as to prevent their extension to the nasal fossæ, the larynx, and the trachea. The india-rubber bag must be forcibly compressed and made to semi-rotate five or six times, which facilitates the projection of the powder. As the insufflation is performed in two or three seconds, and as the pain produced by the nitrate of silver powder only shows itself a little later, the first insufflations must be made when the patient draws a deep breath. In this way the powder penetrates into the larynx and arrests the croupal affection at the outset, before the pain is developed. It is understood that some symptoms of incipient croup should be present. When the insufflation is finished, the tube of the insufflator should be cleaned, and the nitrate of silver powder put away in a small, well stoppered bottle. As the diphtheritic membranes sometimes reappear, Dr. Guillon uses astringent gargles to prevent their development; and, if these means be not adequate, he has recourse to a fresh insufflation.

TRIDEAU ON THE TREATMENT OF DIPHTHERIA BY CUBEBS AND COPAIBA.—Dr. Trideau of Ando-

uille, in the *Gazette Hebdomadaire* for March 28, 1877, gives a detailed description of his treatment of diphtheria by cubebs and copaiba. He lays down the following rules for the use of cubebs. 1. The cubebs should always be finely powdered at the time of use, and suspended in syrup or in strongly sugared water. 2. It should be given every hour, so that the system may be constantly under the influence of the medicine. The doses should be from 120 to 150 grains for children more than a year old, and from 375 to 600 grains for adults during the 24 hours. 3. The use of the remedy should be continued some days after the disappearance of the false membranes; as a rule, three or four days, especially if the glandular swelling persists. 4. If there be no improvement at the end of three or four days, the dose must be increased, whatever may be the age of the patient. 5. The use of the drug must be renewed and continued perseveringly on the least reappearance of the membrane. 6. If diarrhoea supervene, a little syrup of poppies should be given if the patient be a child, or tincture of opium if an adult. 7. A strengthening diet, such as milk, soup, and eggs should always be associated with this treatment, and liquid or semi-liquid aliments if there be paralysis of the larynx. 8. The progress of the disease must be watched very carefully, so as to see if the medicine agrees with the patient. Dr. Trideau employs the following formula—firstly, powdered cubebs, 12 to 15 grammes; simple syrup, 100 grammes; water and Malaga wine, 20 grammes; one, two, or three of these mixtures to be taken in the 24 hours, according to the age of the patient and the severity of the disease. Should the disease not be amenable to cubebs alone, copaiba in the following form should be given concurrently with it, especially in adults; Mialhe's solidified balsam of copaiba, 25 centigrammes; powdered cubebs, 15 centigrammes; for one pill; 20 or 30 to be taken in the 24 hours. Only one at a time must be given, and the number prescribed must be administered the same at equal intervals in the 24 hours. The copaibic scarlatiniform eruption, which generally supervenes after the more or less prolonged use of these pills, always coincides with the cessation of the disease. Very few exceptions to this law have been observed in the case of very young children. Some teaspoonfuls of syrup of poppies should be given to children or some laudanum to adults, with the copaiba, to prevent diarrhoea. If these pills be used for children, as many should be given daily as they are years old. If there be difficulty in swallowing them, they should be given broken into pieces in a little marmalade or baked apple. The cubeb draught should be continued according to the directions given above. If, for any reason, the copaiba pills alone be given, the number above prescribed must be increased at least a third, or even doubled; but only one should be given at a time, at equal intervals during the day.

SÉE ON THE TREATMENT OF ALBUMINURIA.—In the treatment of albuminuria, caused by Bright's disease, accompanied by more or less marked œdema, M. G. Sée (*Union Médicale*, June 6) prescribes two or three litres of raw milk, from which the cream has not been removed, in the course of the twenty-four hours. This regimen he continues for months, and even for years. He likewise prescribes, according to circumstances, iodide of potassium, tartrate of potash, and iron or preparations of tannin. Many patients have been cured by this prolonged system of treatment.

GUBLER ON THE THERAPEUTIC ACTION OF SALICYLIC ACID.—M. Gubler, at the meeting of the Paris Société de Thérapeutique, on April 17, stated that numerous experiments had more and more convinced him that salicylic possesses neither antiphlogistic nor antipyretic properties. In certain cases it produces copious diuresis; in others, on the contrary, the quantity of urine voided is diminished. The reason of this is, that salicylic acid is a diuretic after the fashion of the neutral salts; it stimulates the kidney whilst eliminating itself by that organ, but sometimes it irritates, and this irritation produces an increase of urine. If, however, the kidney be diseased, as in certain severe fevers, and in albuminuria, this stimulation may go on to inflammation, and then there is a diminution of the water which passes through the kidney. It is, therefore, not an absolute diuretic. It is, nevertheless, probable that in cases in which it induces diuresis it brings on an arrest of the temperature up to a certain point. To ensure a certain amount of diuresis is always sufficient to diminish tension and even combustion, but beyond that action nothing in the effects of salicylic acid recalls those of quinine. As to its topical action, it is certainly antipyretic, but here some difficulties are manifest. Salicylic acid is a violent sternutatory; it brings on dryness, bitter taste, and burning in the respiratory passages. For this reason some surgeons have given up the use of salicylated cotton. M. Gubler has also used salicine, and does not consider it to be a very good drug. It likewise becomes partially changed into salicylic acid, since this latter is only the product of a combustion of salicine. The urine of patients who have taken salicine contains salicylic acid. This is a transformation analogous to that of chloral into chloroform and formic acid. M. Gubler has also observed that the urine of patients after taking salicylic acid is of a brown bistre-like colour similar to the tint given to the urine by carbolic acid. It appears that the reduction into carbolic acid here also only occurs partially. M. Hogg had found carbolic acid in the urine of patients under the influence of salicylic acid.—M. Trasbot pointed out, as a proof of the irritant properties of salicylic acid, the presence of numerous ulcerations in the stomach of a horse which had taken 75 grains.—M. Dujardin-Beaumetz was pleased with the interpretation given by M. Gubler to the action of salicylic acid on the kidney. He indeed tried it in polydipsia; and only obtained gastric irritation from its use. This substance had been used in Germany as an excellent remedy for diphtheria, thrush, etc., but M. Dujardin-Beaumetz was convinced that in the case of thrush salicylate of soda is no better than any other alkaline solution. As to its action in rheumatism, it cannot be denied that it diminished the pain, but without at all abridging the duration of the disease.—M. Gubler reminded his audience that M. Bergeron had often at the Sainte Eugénie Hospital tried salicylic acid as an external application in diphtheria, and that he always had negative results. Its topical action, however, was of a different character. M. Bucquoy cited M. Cadet de Grassicourt's testimony to the same effect.

MITCHELL ON CONCENTRATED SOLUTION OF SALICYLIC ACID.—Mr. C. L. Mitchell recommends, in the *American Journal of Pharmacy*, the following formula for a concentrated solution of salicylic acid.

Salicylic acid, pure .....	3ij.
Borax .....	3j.
Glycerine .....	q. s.



Mix the borax and acid with half a fluid ounce of glycerine, and heat gently until dissolved, then add glycerine to make up one fluid ounce. This solution can be diluted with water to any extent without immediate precipitation, but if the volume of water reaches more than ten times that of the glycerine the mixture becomes cloudy after a time.

According to Charles Baker (*American Journal of Pharmacy*, July 1876) salicylic acid, when heated with twice its weight of olive oil, forms a homogeneous mixture, admirably adapted for application to surfaces. The oil separates to some extent on standing, but can be readily recombined by shaking.

MITCHELL ON A FORMULA FOR ERGOTIN.—Mr. Charles Mitchell (*Richmond and Louisville Med. Journal*, Dec. 1876) recommends the following, which he states to be in every way satisfactory. R. Ergot, in fine powder, ℥viii; acetic acid, f℥ij; alcohol, f℥iv. Moisten the ergot with a mixture of the acid and f℥viii of water. Let it stand twenty-four hours, pack in a percolator, and exhaust with water; evaporate to four fluid ounces, add the alcohol; let it stand several hours, filter, and evaporate to an extract. Result, about 480 grains. One grain is equal to eight grains of ergot.

#### RECENT PAPERS.

On the Antipyretic Action of Salicylic Acid and its Salts. By Dr. Giersler and M. E. Ricklin. (*Gazette Médicale de Paris*, Nos. 7, 8, 12, 14, and 22, 1877.)

Muriate of Pilocarpin. By Dr. H. Curschmann. (*Berliner Klin. Wochenschrift*, June 18.)

On the Action of Muriate of Pilocarpin. By Dr. E. Leyden. (*Ibid.*, July 2.)

#### OBSTETRICS AND GYNÆCOLOGY.

CHARLES ON THE TREATMENT OF ECLAMPSIA.—Dr. Charles (*Memoirs of the Belgian Academy of Medicine*, 1876) sums up as follows the treatment of eclampsia, in his memoir on the convulsions of parturient women, which was crowned by the Belgian Academy of Medicine. 1. Mechanical eclampsia from the sixth to the ninth month: (a) bleeding, if the case be urgent, or if there be true or apparent plethora; (b) drastics, in all cases, which may be more or less replaced by diaphoresis; (c) chloroform when the fits are about to commence and during the clonic convulsions; (d) chloral in the intervals of the attacks as an injection to beneficially fill the place of narcotics; any antispasmodic, such as bromide of potassium, may be added to it; (e) to finish the delivery if possible; bring on labour, if the fits do not show signs of disappearing; to bring on forced delivery in very serious cases. 2. Reflex eclampsia before six months' gestation and after delivery: (a) bleeding is but very rarely indicated; (b) purgatives are always somewhat useful; (c) chloroform, chloral, etc., should be continued as in mechanical eclampsia; and antispasmodics should not be neglected. 3. Toxic eclampsia. Fulfil the symptomatic indications; general or local bleedings to combat congestion of the brain and spinal cord when it is very marked; cold applications to the head, purgatives, diaphoretics, baths, revulsives, narcotics, anæsthetics, etc.

BRICKELL ON THE TREATMENT OF PELVIC EFFUSIONS.—In the *American Journal of Medical*

*Sciences*, April 1877, Dr. D. Warren Brickell, after relating several cases of effusion into the pelvis ending in suppuration, draws the conclusion that, when diagnosed, both serous and purulent effusions should at once be punctured, and that the vagina affords the most convenient point for puncture. Dr. Brickell considers that topical and internal remedies have no influence on pelvic serous effusions. He divides pelvic inflammation into two distinct forms—serous and phlegmonous, or suppurative. Pelvic cellulitis is by no means confined to married or child-bearing women, but may occur in virgins.

SCHEIDL ON TWIN-BIRTH IN A BIPARTITE UTERUS.—In the *Med.-Chir. Centralblatt* (No. 11), Dr. Scheidl relates the following case. In January 1872 he was called to a primipara. The abdomen was unusually distended, and presented an abnormal shape. On placing the patient on her back, a marked prominence was seen on the left side, which was diagnosed as a second fœtus. It seemed as if this second fœtus were lying in the peritoneal cavity, and not in the uterus. The head presented, and was delivered by the forceps. It was a male child; the placenta did not follow, but, as the hæmorrhage was inconsiderable, Dr. Scheidl allowed things to take their course. At the end of twenty-four hours, there was considerable hæmorrhage, and he delivered her of the second child, a female, the foot presenting. On passing his hand into the uterus to detach and remove the placenta, he found the vagina to be normal, but the uterus to be divided into two distinct cavities; the right one perpendicular, the left cavity lying horizontally towards the left. The patient has since again become pregnant, and has been delivered of a female child, without any artificial assistance.

STICKL ON EXTRA-UTERINE GESTATION.—In the *Aertztliches Intelligenz-Blatt*, No. 16, Dr. Stickl relates a case of extra-uterine gestation complicated with a normal uterine gestation. The patient married at twenty-two years of age, and had eight children born at term, and four prematurely. In March 1874, the catamenia ceased, and during the succeeding months the patient, V. A., felt and showed all the usual signs of pregnancy. At the end of November 1874, severe pains in the abdomen set in, together with bleeding from the genitals. In a few days these symptoms ceased and milk was secreted, which remained until the beginning of 1875. The size of the abdomen only slightly diminished. On February 2, 1875, the catamenia reappeared, and continued at regular intervals until the middle of December 1875, when they ceased. On the evening of May 31st, 1876, severe labour-pains set in, and Dr. Stickl delivered her of a fœtus, and removed the placenta; at the same time, he could feel a tumour pressing the uterus from above. From this time the patient became thinner and weaker. The original tumour could be plainly felt in the umbilical region. On July 8th, Dr. Stickl introduced under the umbilicus a small trochar, through which a small quantity of greenish grey fluid escaped. On the 10th, he introduced a larger trochar, and drew off some more fluid. The trochar was withdrawn and replaced by a laminaria tent. Two days afterwards, the cyst was washed out with carbolic solution. On July 24th, Dr. Stickl introduced his forefinger, and could feel the fœtus; he then enlarged the opening in the abdominal wall by incisions in different directions, and withdrew the fœtus piecemeal. The cyst was injected with carbolic solution, and the opening

covered with carbolised tow. The cyst, under repeated injections gradually diminished, and by August 15th it had almost healed. V.A. has returned to her usual occupations, and has regained her usual health.

STORCH ON MYXOMA OF THE PLACENTA.—In the *Nordiskt Mediciniskt Arkiv.*, Band viii, Häft 4, Dr. Storch describes three cases of partial myxoma of the placenta. In the first case there was a large tumour near the foetal surface of the placenta; its diameter was five and a half inches, and it was situated immediately under the atrophied and distended chorion. A villous trunk radiated from the chorion throughout the mass of the tumour. The tumour was composed of a large number of nodosities of the size of a pea or smaller. Towards their peripheries the morbid villi took on a normal appearance, and dissolved into a filamentous tissue which, without any defined limits, was continuous with the healthy surrounding structure of the placenta. Nowhere did the tumour approach the uterine surface; the serotina was normal. In the second case there was an oval tumour, 1.2 inches long, in the mass of the placenta, in communication with a villous trunk arising from the chorion. The said villous trunk ramified in a normal manner. In the third case, a similar tumour, nearly 10 inches in length, was present. The author remarks that these so-called myxomata should rather be regarded as cellular hyperplasias than myxomata, inasmuch as they result from a hyperplasia of the stroma of the central mucous and vascular tissue of the villi, combined with an excessive new formation of cells in the tissue.

FANCOURT BARNES, M.B.

#### RECENT PAPERS.

On the Reciprocal Influence of Pregnancy and Injury. By M. A. Verneuil. (*Revue Mensuelle de Médecine et de Chirurgie*, July 1877.)

On Tarnier's New Forceps. By Dr. Stotz. (*Archives de Tocologie*, June 1877.)

Drainage of the Uterus in Puerperal Septicæmia. By Dr. M. Schede. (*Berliner Klin. Wochenschrift*, June 4 and 11.)

How is a rigorous Antiseptic Treatment of Wounds of the Female Genital Canal to be carried out? By A. Schücking. (*Ibid.*, June 25.)

On the Placental and Pulmonary Circulation after the Birth of a Child. By Dr. A. Friedländer. (*Ibid.*, July 2.)

Case of Procidencia Uteri. By Dr. J. M. Duncan. (*Edinburgh Medical Journal*, July.)

Case of Triplets complicated with Convulsions after Delivery. By Dr. W. A. Finlay. (*Ibid.*)

Description of an Acardiac Fœtus. By Dr. A. R. Simpson. (*Ibid.*)

Supplementary Axillary Mammæ. By Dr. O. H. Garland. (*Ibid.*)

### OPHTHALMOLOGY AND OTOLOGY.

WARLOMONT AND DUWEZ ON THE ETIOLOGY OF NEURO-RETINITIS.—In the *Annales d'Oculistique*, Mars-Avril 1877, there is an exhaustive paper by Drs. Warlomont and Duwez on the etiology of neuro-retinitis. After discussing the various theories at present offered as explanatory of its causation, the authors sum up as follows.

1. We must admit two great classes of neuro-retinitis, which are almost always blended; descending neuro-retinitis, and neuro-retinitis by stasis.

2. The mechanism of their production may take place by continuity of tissue from the pia mater to

the nerve, by migration, and by reflex irritation. In all probability it is to the last influence that the greatest value must be accorded. Irritation of the vaso-motors in reality modifies the activity of the regions to which they are distributed, whether by destroying it, as is shown by the symptoms, aphasia, anæmia, deafness, paralysis, cardiac syncope, stoppage of respiration, suspension of the changes between the tissues and the blood; or by exalting it and giving rise to certain morbid manifestations which may produce delirium, convulsions, and trophic disturbances. The theory of vaso-motor irritation explains the symptomatic variations met with in the same subject, and which are manifested on certain days, or even at certain hours of the day; the appearance of highly developed symptoms in limited lesions of the brain, their absence in extensive lesions, their disappearance whilst the cerebral affection remains unchanged. It explains why the lesions situated in the cerebellum, the hemispheres, and the base of the brain, may equally produce neuro-retinitis. If we have not recourse to this interpretation, how shall we explain the influence of intestinal worms upon the visual faculty? And if we are forced to admit that this influence is exercised by means of the vaso-motor nerves, why should we refuse to accept a similar mechanism in the production of neuro-retinitis? It compares the mechanism of the indirect symptomatology, due to a cerebral cause, with reflex symptoms due to irritation of peripheral nerves, such as those of the intestines, the lungs, and the skin. It also accounts more satisfactorily for the influence exercised by changes in the blood, by anæmia or toxæmia, whose effect consists in inducing an irritation which is propagated in exact imitation of cerebral maladies themselves.

WECKER ON THE USE OF ESERINE IN OPHTHALMIC THERAPEUTICS.—In the *Annales d'Oculistique* for January-February 1877, Dr. Wecker speaks emphatically of the advantages to be derived from the repeated use of a solution containing one per cent. of the neutral sulphate of eserine.

This solution he recommends to be dropped in the eye every hour or hour and a half, with the idea of utilising, on the one hand, its antiseptic qualities, and on the other its influence over the transudation of fluids, from its action upon the muscular coat of the blood-vessels.

Dr. Wecker uses it in three forms of disease.

1. In patients suffering from large ulcerations of the cornea with abscess; after having emptied the anterior chamber of pus, and made as free an opening in the abscess as possible.

2. In ulcer serpens. It is here especially useful when combined with keratomy, which Dr. Wecker prefers to the incision practised and recommended by Sämisch.

3. In supuration of the corneal wound after extraction of cataract. The plan adopted by Dr. Wecker is as follows. A stylet is passed throughout the whole length of the wound in such a way as to evacuate the aqueous humour, and every half hour (if there be vomiting), or every hour, some drops of the eserine solution (1-100) are instilled. At the same time the eyelids are kept scrupulously clean by washing them frequently with a warm carbolic acid lotion (1-1000).

The solution of eserine decomposes rapidly, and should be freshly made every twenty-four hours in summer, and every two or three days in winter.



**HARLAN ON THE CURE OF BLEPHAROSPASM BY THE INHALATION OF NITRITE OF AMYL.**—In the *American Journal of the Medical Sciences*, April 1877, Dr. Harlan reports the case of a girl, aged 15, who suffered from congenital dislocation of both lenses. There was great pain and irritation in the eyes, dependent apparently upon the pressure of the oscillating lenses upon the iris. To relieve this condition, the lens of first one eye and then of the other was removed, with temporary benefit.

Three months afterwards she was attacked with intense photophobia and blepharospasm, which was relieved only after prolonged treatment.

A year later she was again attacked with still more severe photophobia and blepharospasm, and for four months she remained under treatment. At last, all the means suggested by Dr. Harlan and his colleagues having proved ineffectual, the inhalation of nitrite of amyl was tried, in quantities of half a drachm and one drachm twice and three times daily. On the fourth day, the patient walked into the clinic-room alone with her eyes open, and the relief was permanent. Dr. Harlan explains the necessity for such large doses of the nitrite of amyl, by the hypothesis that the patient was difficult to amylise.

**LÆWENBERG ON THE PHYSIOLOGY AND THERAPEUTICS OF THE GASEOUS CHANGES OCCURRING IN THE CAVITY OF THE TYMPANUM.**—In a recent pamphlet, Dr. Læwenberg of Paris proposes an ingenious modification in the treatment of diseases in the middle ear, depending upon Eustachian obstruction.

He considers the very temporary success which follows insufflation of ordinary air, by means of Politzer's bag on the Eustachian catheter, to be due to a fact which has hitherto been overlooked, viz., the rapid absorption of the blood of oxygen and the comparatively small replacement of carbonic acid.

It has been shown by Pflüger and Wolfsberg, that in bronchi, closed artificially, all the contained oxygen was absorbed by the blood with great rapidity, and only a small quantity of carbonic acid substituted. Dr. Læwenberg believes that a similar process takes place in the tympanic cavity, and so that all air insufflated is rapidly reduced in volume, without making any permanent impression upon the concave membrana tympani, or relieving for more than a very short period the increased labyrinthine pressure. The remedy he proposes is the insufflation of air which has been almost entirely deprived of its oxygen by being inspired and expired several times. For this purpose, he uses a bag of caoutchouc, the contents of which the patient is made to breathe over and over again until but little oxygen remains. From this bag, as a reservoir, Politzer's bag is filled, or a direct communication with the tympanic cavity is established by means of the Eustachian catheter and some flexible caoutchouc tubing.

Dr. Læwenberg has also used pure hydrogen gas in a similar manner, on account of its extremely slow absorption by the blood.

The results of this procedure are very satisfactory; air, so prepared, remains for a long time in the tympanic cavity, undiminished in quantity; the consequent relief is more lasting, and the comfort of the patient is greater than when ordinary atmospheric air is employed.

**BULL ON SYPHILITIC NEUROSES OF THE EYE.**—Dr. Bull contributes an instructive paper to the *American Journal of the Medical Sciences*, for

January 1877, embracing certain peculiar varieties of syphilitic neuroses. He confines his attention to syphilitic disease affecting the optic nerve and the ocular muscles, and notices especially that in syphilitic neuroses of the eye, as in syphilitic diseases of the brain the symptoms are of two kinds, transient and permanent, and that it is impossible to foretell the order of occurrence or nerve lesions. Sometimes they occur early, before even the cutaneous eruption, and sometimes after a very long interval.

He reports three cases in which optic neuritis occurred in syphilitic patients, in which vision failed up to a certain point and then remained stationary, but in which the ophthalmoscopic signs of neuritis remained unchanged for two years.

In one case, eighteen years had elapsed since the occurrence of primary disease; in the others, six and eight years. In two cases, diplopia and headache preceded the neuritis, and, in one case, neuritis was the first ocular symptom. In each case there were well-marked neuro-retinitis, swollen disc, retinal cedema, engorged veins. Vision was greatly impaired. The treatment consisted in mercurialunctions and the internal administration of iodide of potassium. Under this the paralytic symptoms yielded, but there was no change in the neuritis nor any improvement of vision. It is, however, very remarkable that there was no sign of atrophy of the optic nerve, notwithstanding the long-continued inflammatory pressure.

In another case there was paralysis of the third and sixth nerves preceding optic neuritis.

The probable source of mischief in each case was gummos exudation, with or without low inflammatory action affecting some part of the course of the optic nerves.

The cases are interesting as showing that the later syphilitic affections tend to relapse after treatment, from liability to fresh gummos deposits, and that their prognosis is unfavourable.

**TEILLAIS ON RUPTURE OF THE CHOROID.**—Dr. Teillais of Nantes reports three cases of rupture of the choroid (*Annales d'Oculistique*, January-February 1877) observed by him immediately upon their occurrence.

They were the results of direct violence. In each the choroid alone suffered, the retina and the sclerotic remaining intact. The rupture was attended with hæmorrhages from the torn membrane, hyalitis, and floating bodies in the vitreous chamber.

Vision was almost entirely lost for some time after the accidents, and its acuity was ultimately permanently impaired, probably from the effect of shock upon the retinal elements. The presence of a central scotoma was marked in each case, peripheral vision remaining nearly normal. When the inflammatory symptoms following the injury subsided, the acuity of vision improved considerably. With the ophthalmoscope the fundus showed the appearances usual in such cases, viz., distinct rents in the choroid in the neighbourhood of the optic disc, more or less curved in shape, allowing the glistening sclerotic to be seen.

With the binocular ophthalmoscope the vessels could be seen passing across the rents on a higher level, but the shadow said by Mauthner to be thrown on the sclerotic was not visible. The treatment consisted in the free use of Heurteloup's leech to the temple, and the exhibition of mercury and the iodide of potassium internally.

ALT ON SYMPATHETIC OPHTHALMIA.—In No. 4, Vol. v, of the *Archives of Ophthalmology and Otolaryngology*, Dr. Adolf Alt of New York gives an admirable and exhaustive paper on the anatomical causes and the nature of sympathetic ophthalmia. He has abstracted and carefully compared all the published accounts of cases of this disease, and has compiled some good illustrative statistical tables. From his researches, he considers that the following practical deductions may be drawn.

1. The entire nervous apparatus of the diseased eye participates in the transmission of the affection to the other.

2. Scars in the hard membranes, whenever combined with alterations in the other parts of the eye, particularly in the uveal tract, retina, or optic nerve, are capable of calling forth sympathetic affections of the other eye at any time.

3. Purulent panophthalmitis makes no exception.

4. Consequently, its artificial production, as a prophylactic measure against sympathetic affection, is reprehensible.

5. The time at which sympathetic affections most frequently manifest themselves varies between seven days and eight weeks, after the beginning of disease in the first eye.

6. As soon as the first trace of a sympathetic affection manifests itself (a diagnosis which should be made with the greatest care) therapeutic measures should be resorted to.

7. The only efficient means consists in enucleation of the eye first affected.

8. When it is fairly presumable that the affection has extended to the optic nerve, the removal of a large piece of the nerve, together with the globe, should not be omitted.

9. Should a case come under treatment in which the iris or the capsule of the lens is incarcerated, the incarcerated iris or capsule should be freed before sympathetic irritation has made its appearance. In recent cases an abscission of the prolapse, with or without iridectomy, will obviate, in most cases, the impending danger of sympathetic ophthalmia.

DERBY ON THE PERCENTAGE OF SHORT SIGHT.—Impressed with the results of the labours of Drs. Colm, Erismann, and Conrad in Europe, Dr. Hasket Derby communicates to the *Boston Medical Journal* of March 22, 1877, a report on the percentage of near sight found to exist in the class of 1880, at Harvard College.

In 1875, Dr. Derby examined the classes of 1879 and 1880, at Amherst College, and found twenty-eight per cent. of 1879 to be myopic, and a year later, fifty per cent. of these had grown more near-sighted. Of 1880, twenty-seven per cent. were myopic.

Of one hundred and twenty-two of the Harvard students, 29.5 per cent. were myopic.

Dr. Hasket Derby suggests that the state of vision of all those entering upon extended courses of study should be tested upon their admission, and again on leaving. By this means valuable information would be gained, which would be of use in determining the future career.

BURNET ON THE SO-CALLED "SECOND SIGHT" OF OLD PEOPLE.—Dr. Burnet reports (*American Journal of Medical Science*, April) a case of a man, aged 85. He began to use glasses for reading at about 40. He found it necessary to increase the strength of his glasses once subsequently. When about 70 he began to read his paper without spec-

tacles. He now reads No. 1 Jäger, at eighteen inches, with ease. His distant vision equals  $\frac{3}{8}$  without glasses, and with  $-40''$  equals nearly  $\frac{3}{8}$ . Dr. Burnet points out that this is one of those instances frequently alluded to but not investigated, in which a myopia, presumably axile and due to a sclero-choroiditis, was developed after the age of 70. And from it we learn the important fact "that in cases of second sight there is no essential rejuvenescence". No power of accommodation is regained, but the far point is, in consequence of the development of myopia brought within ordinary reading distance.

LLOYD OWEN.

VON OETTINGEN ON AMBLYOPIA AND AMAUROSIS AFTER HÆMORRHAGE.—The author of this paper (published in the *Dorpater Medicin. Zeitschrift*, Band vi), which cannot fail to interest all ophthalmologists, acknowledges the great service done to ophthalmology by Dr. S. Fries, who collected and published 106 cases of this kind. In 96 of these, Dr. Fries states the nature of the hæmorrhage: in 34 it was intestinal; in 24 uterine; 24 were cases in which bleeding was employed as a therapeutic measure; in 7 cases the bleeding was from the nose, in five from wounds; 1 was a case of hæmoptysis; and in 1 the blood came from the urethra.

Dr. von Oettingen then gives the details of a case of amaurosis following bleeding from the urethra, which was almost identical with Fries' case. This patient stated that the bleeding continued for several days at intervals, a cupful of blood being lost at a time; that he then became very weak, and passed into a somnolent half-conscious condition; and that when he recovered from this state he found that he was blind.

The author then compares his case with Dr. Fries' case. In both, the patient was a strong, apparently healthy man, without any obvious cause for the bleeding; but in Dr. Fries' case it continued for several months at intervals, and was followed by loss of consciousness and delirium. In both cases, on awaking from this condition, the highest degree of amblyopia was manifested. In both cases, the ophthalmoscope showed a white atrophied disc, with the characteristic leaden tinge, thread-like arteries, and somewhat angular outline; lastly, in both cases, the injection of strychnine gave some temporary improvement.

The remainder of the paper is a critical examination of the probable nature of the relation of amblyopia and hæmorrhage. The writer considers that there can be no doubt but that the causal connection cannot be direct, since the retina is known to retain its function in an unimpaired condition in extreme anæmia, as well as in the acute ischæmia which occurs in the stage of asphyxia in cases of cholera.

He divides the cases of amblyopia after hæmorrhage into two groups: first, those in which the blindness occurs immediately after the loss of blood; and secondly, those in which it supervenes after an interval of some days.

In the first group of cases, he thinks that the blindness is produced by an increased quantity of cerebro-spinal fluid, with dilatation of the ventricles and œdema of the brain-tissue; conditions which have been shown to result from the rapid withdrawal of blood from the cranial cavity by direct experiment. In such cases, the loss of vision is always accompanied by other and serious brain-symptoms.

In the second group of cases, he considers that fatty degeneration of the smallest arterioles and capillaries, which Virchow has shown to be liable to



result from continued hæmorrhage, is the primary cause of the lesion of the organs of vision. He thinks that the altered nutrition of the neighbouring parts, the result of the diseased walls of the vessels, is in some cases the cause of the blindness. In other cases, he thinks the walls of the vessels ultimately give way, and small clots result in some part of the nervous tract concerned in vision, either in the retina itself, in the optic nerve, or in the nerve-centres.

**TALKO ON CONGENITAL SEROUS CYSTS IN THE ORBIT.**—Dr. J. Talko, in Zehender's *Monatsblätter* for April, publishes a case of microphthalmus with a serous cyst under the lower lid.

The author has observed five similar cases, and gives the following summary of his observations.

Congenital serous cysts of the orbit are usually accompanied with microphthalmus. Such cysts are always situated between the eye and the under—or under and lateral—wall of the orbit; they are commonly covered with conjunctiva, and increase in the direction of the lower lid, which they stretch so that the colour of the cyst is seen through it. Such cysts are usually filled with yellow serous fluid, rich in albumen. Their size is very variable; they cause ectropion of the lower lid, and prevent the development of the eye, which remains very small and deeply placed in the orbit. Such cysts are not formed after birth; but they do not originate in a common vesicle with the eye. They are not usually intimately united with either the conjunctival fold or the eyeball. Such cysts should be extirpated.

**WECKER ON THE DRAINAGE-OPERATION.**—The March number of the *Monatsblätter für Augenheilkunde* contains a short notice by Wecker on his new drainage-operation for the treatment of detached retina. This consists in the insertion of a gold wire seton penetrating the sclerotic and choroid at the equator of the eyeball, or as near to it as possible, between the inferior and external recti. No results are given; nothing but a description of the operation itself. A reference is given, however, to a very important paper by the same author, published in Von Gräfe's *Archiv*, Band xxii, Abth. 4, on the operation as a means for the treatment of glaucoma, for which it was first devised by the author, with this modification—the gold wire seton is inserted in the corneal margin. Wecker proposes to perform his operation only in cases of absolute glaucoma in which there is atrophy of the iris, or where an iridectomy has already been done without reducing tension, and in cases of a hæmorrhagic nature.

**VON WYSS ON THE HEALING OF WOUNDS OF THE CORNEA.**—In a paper in Virchow's *Archiv*, Band lxi (abstract in *Monatsblätter für Augenheilkunde*, March), is a paper by Hans Von Wyss, on the healing of corneal wounds. The results of his investigation are included in the following statements. 1. Non-penetrating wounds become filled up with epithelium which is proliferated from the epithelium at the edges of the wound. 2. Penetrating wounds are filled to two-thirds of their depth with epithelium. 3. The cellular elements of the true corneal substance take no part at first in the healing process. 4. Inflammation of the cornea does not follow a simple corneal wound; it is always the result of an accidental exciting cause, and delays the proper healing process.

B. THOMPSON LOWNE.

**BAUMEISTER'S MODIFICATION OF AN OPTOMETER - OPHTHALMOSCOPE.**—In the *Klinische Monatsblätter für Augenheilkunde* for April, Dr. S. Baumeister, of Berlin, describes a modification of the ophthalmoscope first shown by the reporter at the British Medical Association meeting of 1873 (*Vide* Catalogue, No. 410), and which has been separately proposed by Knapp and Landolt since then. In this modification the plus and minus glasses are arranged so that in some cases convex can be superimposed on convex or concave glasses as desired. Sixty-four powers are obtained from 14 lenses, varying from 0.5 to 18 dioptrics. Giving as it does about half the powers which the English instrument does, and having the objections of being turned from the periphery, and having a reflex from an improperly bored mirror, it necessarily costs much less than the instrument made by Watson. The price of Dr. Baumeister's instrument is 27s. in Berlin.

**STIFLER ON RELAXATION OF THE MEMBRANA TYMPANI.**—Dr. M. Stifler, of Munich, discusses, in the *Aertliches Intelligenz-Blatt* of July 18th and 25th, the subject of relaxation of the tympanic membrane. Rupture of the tensor tympani, pressure from ceruminous accumulation, or foreign bodies, and spontaneous atrophy of all the layers, have been given as causes of abnormal relaxation. Stifler says that all affections of the middle layer are secondary to some affections of the dermoid or inner layers; and that anything which causes development or increase of the vessels of these layers, infiltration, and exudation, capillary compression, or partial obliteration of the vessels, may cause softening, molecular disintegration, and absorption of the fibrous layer, and so greater or lesser perforation. These conditions are seen under circumstances which are combined with a hyperæmic state of the membrane, either acute or chronic; and it is "mostly in the later stages of hyperæmic conditions that atrophy comes on", in increased concavity of the membrane, in acute or chronic myringitis, in superficial ulcerative processes of the dermoid layer, and in mucous or purulent accumulations in the cavity.

The symptoms are great transparency, great mobility even to motion, with respiration and pulsation, tinnitus, vertigo, deafness.

The treatment generally recommended is the use of Politzer's method of inflation, astringents, incisions of the membrane, and myringectomy. The results which Dr. Stifler obtained were satisfactory, the change of the position of the membrane being seemingly sufficient to cause the improvement.

W. LAIDLAW PURVES.

## RECENT PAPERS.

On Changes in the Vision in Typhoid Fever. By Dr. Galezowski. (*L'Union Médicale*, June 12.)  
Diphtheritic Paralysis of Accommodation. By M. Deacon. (*Journal de Médecine de l'Ouest*.)

## DERMATOLOGY.

**DEHIO ON THE PATHOLOGICAL ANATOMY OF LEPROSY.**—The specimens of leprosy tissues examined (*Dorpat. Medicin. Zeitschrift*, Band vi, Heft 3 and 4) were obtained from the Pathological Institute and the surgical clinics in Dorpat. As regards the history of the newly-formed elements,

the author agrees with Virchow and Thomas, having found that in all stages of the disease the characteristic appearances consist of masses of small slightly granular cells. These cells are usually spherical or spindle-shaped, but some of them are angular with tapering projections. A nucleus and nucleolus are always evident. They closely resemble the cells known as white blood-corpuscles or lymph-cells, and agree with them in size.

The first development of the leprous degeneration takes place in a layer which is separated from the rete mucosum by a strip of healthy tissue. It sends processes upwards towards the epidermis, from which it is, however, always separated by a thin portion of intermediate healthy tissue, and downwards to the fat-lobules. In its development it is found in the lymph-spaces of the cutis, and immediately surrounding the finer and finest blood-vessels. Still following the vessels, it is found especially developed round the sweat-glands and hair-follicles, and finally in the fat-lobules, in which it completely takes the place of the normal structures. The sebaceous glands resist longer. In the macular form the fat-lobules are not affected, whilst in the tubercular form they are much infiltrated; but in both forms the nature of the cell-infiltration is the same. The growths from the sweat-ducts described by Friedländer were not found. In an affected eyelid, the growth was found to be arrested exactly at the part where the skin passes into the conjunctiva.

The leprous degeneration of the veins presented peculiarities which have a striking analogy with the changes found by Heubner in syphilitic arteries. The intima was thickened by an infiltration, with small cells towards its inner surface, the infiltration being limited by the elastic lamina. There was also a cellular infiltration of the muscular coat and of the adventitia. By the further progress of the disease, the lumen of the vein becomes filled with a hyaline, transparent, hard, and firm intercellular substance. The consequent occlusion of the veins affords an explanation of the cyanotic appearance and hypertrophic condition of the skin which are frequently found.

The changes in the nerves described by Carter and Virchow are confirmed. The cells found in the lymph-spaces of the lymphatic glands had no specific characters.

In the liver the degeneration took place around the ramifications both of the hepatic and portal veins. The nodules were not found in the glandular parenchyma.

**BULKLEY ON TWO CASES OF HYDROA.**—Dr. L. Duncan Bulkley (*Archives of Dermatology*, April 1877) describes two cases of hydroa. A woman, aged 49, who had borne 13 children, was suffering from a moist eczematous eruption, which covered the whole body. Whilst in this condition a bulla formed on the outside of the left foot, and the part did not heal for some time. About six weeks afterwards, another bulla formed on the same spot, enlarged to the size of an egg, and was attended with great itching. The formation of bullæ extended, and the general health was affected. Most of the bullæ were about one-third to one-fifth of an inch in diameter, but some were one to two or three inches in longest diameter. They came suddenly, and were attended with little inflammatory action of the base, which healed readily after rupture. Almost the entire surface of the body was attacked sooner or later, and the lesions never reappeared on the same spot.

Under a fortnight's soothing local applications (arsenic and strychnia being given internally), the development of bullæ ceased. Three months afterwards she had an attack of urticaria (uncomplicated by any other skin-disease), and six months later an attack of eczema of the hands, which readily yielded to treatment.

The second case exhibited "quite a different form of bullous disease, recurrent in character, and of much less extent, which might more properly be called pemphigus, but for the fact that many of the prospective bullæ failed to go on to full development, ending only in erythema".

[The term hydroa is chiefly known through the works of Bazin, who applied it to certain forms of herpes and erythema papulatum. For example, in one of his works (*Affections génériques de la peau*, pp. 114, 115) he mentions having seen a case of hydroa which was diagnosed as herpes iris by Devergie, as herpes by Gibert, as an erythema which had become the seat of vesication by Cazenave, and as erythema papulatum by Hardy. In the same book (p. 108) he states that the herpes iris of Bate-man is one variety of hydroa. Dr. Bulkley's cases belong evidently to another class. The use of the term by Bazin has already been fertile in misinterpretations, and for this reason its employment in any case at all is of questionable advantage.—*Rep.*]

**THURMAN ON A CASE OF CACHECTIC CHLOASMA WITH VITILIGO.**—Dr. A. Thurman describes (*Annali Universali di Medicina e Chirurgia*, March 1877) the case of a man aged 59, the whole surface of whose body was characterised by excess or absence of pigment, the white patches running into each other and advancing into the darkly pigmented surface by convex borders. Large portions of the skin of the thorax, abdomen, lumbar region, and legs were completely colourless.

The disease had begun three years previously in both hands, then the forearms, then the arms and feet, legs and thighs, and lastly the abdomen and chest; the general health being good during this period. There was no other disease present, but the man had existed in circumstances of great misery. The author calls attention to the advanced age of the patient, the great extent of the disease, and the conditions of life under which it developed, and considers, on these grounds, that it is not to be considered as a case of simple vitiligo, but as deserving the name of cachectic chloasma.

**HALLER ON A CASE OF SCLERODERMA ADULTORUM.**—Haller (*Berlin Klin. Wochenschrift*, April 2) describes a case of scleroderma in a girl aged 19. The catamenia had been irregular for a year, and had not been present for eight weeks, when the disease suddenly appeared on the neck, over the parotid region, and both lower jaws, the breast, shoulders, and arms. After about six months' treatment by strengthening diet, suitable medicines, baths, and the rubbing in of ointments over the affected parts, she began to improve. She soon afterwards quite recovered, with the exception of some hardness of the skin, which remained over the parotid gland and the border of the lower jaw.

**PIFFARD ON A CASE OF ERYTHEMATOUS LUPUS OF THE PENIS.**—Dr. Piffard (*Archives of Dermatology*, April 1877) describes a case of lupus erythematosus of the penis in a man aged 28. The disease had begun as a small reddish spot on the glans near



the meatus five years before. When seen by Dr. Piffard, there were two rings on the glans, and two larger ones situated partly upon the glans and partly upon the skin next the glans. (The patient had been circumcised in infancy.) The borders of the rings were slightly elevated, red, and scaly, the centre being little changed, except that the mucous membrane appeared to be a little paler than normal, and very slightly thinned. The affected parts on the skin were excised, and those on the glans were touched by white hot platinum wire (galvano-cautery). The final result of the treatment was complete removal of the disease and a few barely perceptible cicatrices.

The excised portion of skin was examined microscopically, and the appearances seen confirmed the diagnosis.

**DUHRING ON A CASE OF A BEARDED WOMAN.**—Dr. Duhring (*Archives of Dermatology*, April 1877) reports the case of a woman, 23 years of age, whose upper lip, cheeks, chin, and submaxillary region are the seat of hair, in the form of full moustache and beard, the regions involved being exactly the same as in the male. A portrait on stone from a photograph accompanies the report, and represents a face with characteristically feminine features and a perfectly masculine development of hair. There is also an abnormal development of hair on the shoulder, back, thighs, and legs. She married in her eighteenth year, and had had two children, who died at the ages of 2 and 4 of scarlatina. They presented no unusual growth of hair, nor was there any history in her family of any similar deformity.

In infancy, the woman's face had been unusually covered by lanugo hairs. An increased growth took place when she was ten, again at sixteen, and the full development when she was eighteen. Puberty occurred at fourteen, and had no influence on the hair of the face.

The abnormality was congenital, and seemed independent of sexual development, which in every way followed its usual course.

**SHERWELL ON THE TREATMENT OF NÆVI BY TATOOING.**—Dr. Sherwell (*Archives of Dermatology*, April 1877) has treated nævi successfully by the following method. A number of suture needles (say eight), with grooves on the three sides, are bound together, the points being separated from each other for about one-sixteenth of an inch. They are dipped in a saturated or 50 per cent. solution of carbolic acid, or a 25 to 40 per cent. solution of chromic acid, and are then used to tattoo a portion of the nævus. When all oozing has ceased, pressure is produced by the application of a thick layer of collodion.

G. THIN, M.D.

#### RECENT PAPERS.

On Cysticerci of the Skin. By Dr. P. Guttman. (*Berliner Klin. Wochenschrift*, June 25.)

On a Case of Recurrent Zoster. By Dr. Kaposi. (*Weiner Med. Wochenschrift*, June 23 and 30.)

On Psoriasis. By M. E. Gurbout. (*Gazette des Hôpitaux*, June 28.)

A Study of Venereal and Cutaneous Diseases. By M. Achille Dron. (*Lyon Médical*, July 1.)

On Eczema. By M. Lailler. (*La France Médicale*, June 27.)

## REPORTS OF FOREIGN SOCIETIES.

### ACADEMY OF MEDICINE IN PARIS.

**May 1. Isolation in the Prophylaxis of Contagious Diseases.**—M. Henri Gueneau de Mussy read a paper on this subject. Long ago, the publications of the Société Médicale des Hôpitaux, and within the last ten years M. E. Besnier's reports, accumulated the most convincing proofs of the disadvantages of mixing cases of infectious disease with others; isolation was demanded by hospital physicians as the only efficacious remedy against the development of contagious diseases. Nevertheless, some improvements in this respect excepted, as the temporary hospital where special wards for small-pox cases have been established, it is a matter of astonishment that the French authorities do not adopt those measures widely followed out in England, Holland, and some of the principal cities of North America. M. H. Gueneau de Mussy quoted in reference to this subject the regulations in force in those countries; the numerous precautions taken by the authorities and enjoined on private individuals with regard to the isolation of patients suffering from contagious disease. He cited numerous instances in which he showed that the adoption of these measures and these precautions had prevented the breaking-out of epidemics, which otherwise would infallibly have become prevalent. He would like to have a law prescribing isolation, which should fix its duration according to circumstances; he would specially require that this law should also impose the obligation of a declaration, such as is demanded in the case of contagious diseases of domestic animals.

**Glanders.**—M. Colin communicated a case of latent glanders with lesions in the genital organs. The subject was a mare fifteen years old, very thin, feeble, and altogether physiologically wretched. The animal had no nasal discharge, did not show any congestion of the limbs, nor subcutaneous tumours; in fact, no appreciable symptom of glanders or farcy. It was, however, glandered to the greatest extent, with numerous lesions, of which some were perfectly exceptional, viz., 1, pulmonary and hepatic foci of different epochs; 2, a pustular eruption in the trachea and the larynx; 3, an advanced atrophy of the laryngeal muscles of the left side, due to the compression exercised on the recurrent nerve of the same side by the congested glands; 4, ulcerations in the genital organs; 5, finally, a large quantity of leucocytes in the blood. Taking into account the relative condition of the lesions, and the point at which they had arrived, it was seen that they belonged to three distinct stages. If the animal had survived some weeks or some months, the discharge which would have followed the ulceration of the nasal pustules, the congestion of the glands, which would have resulted from the deposit of the products of ulceration, would have characterised a fourth and last stage of glanders. This case might be considered as a type of latent glanders, which in a sufficient time would terminate in ordinary glanders. It became a question whether the common forms of glanders were not for the most part latent; that is to say, glanders formed in the lungs, the trachea, and the larynx, before the nasal eruption, the discharge, and the glandular swelling. In these cases, the leucocytosis might be the means of diagnosing latent

glanders when the signs of the disease were not sufficiently marked.

*Etiology of Typhoid Fever.*—M. Chauffard intervened in the debate which had been going on for some time in the Academy of Medicine on the subject of the etiology of typhoid fever. M. Chauffard started from the fact that the specificity of typhoid fever might be taken as established. What did the specificity imply from the etiological point of view? The answers varied greatly. One was in vogue at present; that a specific disease can only issue from a specific agent. A specific agent was therefore the sole and effective cause of typhoid fever. This was the opinion of MM. Bouillaud, Gueneau de Mussy, Bouchardat, J. Guérin, and Jaccoud. M. Chauffard did not share it. He endeavoured to defend the possible spontaneity of specific affections, to show how they might be connected with causes, if not ordinary, at least not possessing the specific characteristic, and to prove that the specific affections originating in contagion retained the characteristic of spontaneity which was the necessary characteristic of every disease. But he first showed the mode of action of this sole and necessary agent. It was a parasitic being, a living ferment, a microzoon, vibrio, or bacterium, which made its way into the organism and multiplied itself spontaneously as in a favourable soil. So long as this multiplication lasted, it produced symptomatic disorder. There was a specific disease; when this multiplication ceased, when the microzoa were dead or expelled, the disturbance ceased, and the specific disease was cured. Such was the doctrine which tended to prevail with regard to specific diseases, and to which MM. Bouillaud, Gueneau de Mussy, and Villemin give their adhesion in their latest works. Nevertheless, observation had not yet afforded proof of a microzoon or a ferment of definite form for each specific disease, as there was a ferment for each species of fermentation. This had led M. Bouchardat to allow in typhoid fever of one of the liquid ferments seen in certain physiological actions. However it might be, M. Chauffard found himself in face of a series of assertions which he considered contrary to fact, to clinical observation, and to the fundamental truths of science and art.

#### ACADEMY OF SCIENCES OF PARIS.

May 14. *Typhoid Fever.*—M. J. Guérin read another paper on typhoid fever. The toxic principle produced by the stercoral fermentation was retained principally on the ileo-caecal valve, where most of the pathological changes were found; it afterwards deposited itself on the glands, and passed thence into the mesenteric glands.

*Granular Conjunctivitis.*—M. Gayat read a memoir on granular conjunctivitis in Egypt, and on the ophthalmias of North Africa. The conclusions of his observations were as follows. 1. On the whole of the northern littoral of Africa there exist, in the endemic state, ophthalmic diseases which almost all have their origin in granular conjunctivitis. 2. This disease is characterised anatomically by an inflammation which tends either to congestion or hypertrophy of the normal elements of the conjunctiva. 3. The principal causes of its development are to be found in the atmospheric and terrestrial conditions of these countries. 4. Medical treatment is indispensable, but the general condition could only be stopped by public and private hygienic precautions,

as unceasing as are the unfavourable conditions of the climate.

May 21. *Oxygen.*—M. P. Bert communicated a note on the employment of oxygen at high tension, as a method of physiological investigation. The writer had remarked that oxygen at high pressure killed all living organisms, whether simple or complex; consequently this gas arrested all fermentations produced by living organisms, whilst those due to the action of dissolved matter (diastasis, etc.) resisted it completely. Relying on this fact, he had been able to ascertain the nature of certain fermentations; venoms, vaccine glanders, and charbon having retained their power after having been submitted to high pressures of oxygen, it might be concluded that these ferments owed their action to chemical principles, and not to living organisms.

*On the Anatomical Characteristics of the Blood in New-born Infants during the First Days of Life.*

—M. G. Hayem presented a note on this subject. 1. When the blood of the new-born infant leaves the capillaries it is black, almost as much so as the venous blood. 2. The red corpuscles are much more unequal in size than in the adult; the largest exceed the largest corpuscles in the adult; and in the same way, the smallest are smaller than in the latter. 3. The red corpuscles of the child seem to differ but very slightly from those of the adult in intimate composition; in fact, they allow endosmose, and lose shape more rapidly at the contact of reagents and of moisture; the small corpuscles especially easily become spherical. 4. The number of red corpuscles contained in a cubic millimetre is almost as high at the moment of birth as in the most vigorous adult, and consequently always notably superior to that of the corpuscles of the mother's blood. The average number per millimetre in seventeen infants was 5,368,000. The highest figure was 6,262,000, and the lowest 4,340,000. The result furnished by these calculations appears to be influenced by the manner in which the cord is tied. In six children who had the cord tied immediately, the average figure was 5,087,000. In eight children where the cord was tied only after the cessation of the pulsations of the umbilical artery, the medium was 5,576,000, making a difference of 489,000 in favour of the latter. 5. The colouring power of infants' blood, that is to say the proportion of hæmoglobin determined by the aid of the chromometric process employed by M. Hayem is, on the average, as strong as that of the adult. 6. At the moment of birth, the same varieties of white corpuscles are found as in the adult. However, these elements are a little smaller, and the small variety named globulines are relatively more abundant. During the first two or three days of life, the number of white corpuscles is three or four times greater than in the adult. The average for the forty-eight first hours was 18,000 white corpuscles per cubic millimetre, whilst in the adult the average of white corpuscles is about 5,000. 7. After birth, the blood of the child undergoes important modifications. In a first period corresponding to the diminution of the weight of the new-born infant, the number of corpuscles, both red and white, remains stationary, or slightly increases; when it reaches its minimum weight, that is to say usually on the third day, there is at the same time a sudden and considerable decrease in the number of white corpuscles, which fall from 18,000 to 6,000, or even 4,000, and an increase in the number of red, which generally reach their maximum. The rise in the number of the red corpuscles is very variable, from 100,000 to 600,000, and



not constant. 8. From the time when the child begins to gain weight, the number of white corpuscles rises a little, it presents greater oscillations than in the adult, and remains generally higher than in the latter up to a yet undetermined epoch. At that time there is an average of from 7,000 to 9,000. The number of red corpuscles remains definitely smaller, and in the course of the second week, a decrease of about half a million on the actual amount is found. 9. The fluctuations in the anatomical composition of the blood, as much in relation to the variety of corpuscles as to their number, are very evident from one day to another, and this is one of the most striking characteristics of the blood of infants. The modifications in the proportion of the corpuscles of different diameters bring on corresponding fluctuations in the colouring power of the blood. 10. It is therefore seen that the blood of the new-born child shows characteristics specially belonging to it, and sufficiently important to allow it the designation of foetal blood. This foetal blood is constituted by elements still partially possessing the characteristics of the corpuscles of the embryo. The fluctuations which it undergoes from one day to the other evidently relate to its state of evolution.

#### IMPERIAL ROYAL MEDICAL SOCIETY OF VIENNA.

April 6, 1877. *Innervation of the Uterus and its Vessels.*—Dr. von Basch described the results of a series of experiments which he had made on the uteri of dogs in conjunction with Professor Hoffmann. When the hypogastric nerve was irritated, it was seen, on dilating the vulva, that the cervix pressed down on the vagina and the os uteri opened. This phenomenon depended on the fact that a constriction took place at the cervix; this was specially evident when the muscular structure was strong, as in pregnant animals. The downward pressure of the cervix was then purely passive. When the sacral nerves were stimulated, the downward pressed cervix was drawn backwards and the open os uteri was closed; and, in the case of a young and powerful uterus, it was distinctly seen that the body of the uterus was shortened by contraction of the longitudinal muscular fibres. Reflex irritation of the above-named nerves produced the same result. A rare phenomenon was also observed in one case, in which pressure downwards and backwards of the cervix occurred spontaneously, after division of all the sources of nerve-supply, both the hypogastric and the sacral nerves. The contractions at the neck occurred at intervals of a minute, and were quickened by mechanical irritation of the body of the uterus. As regards the innervation of the vessels, it was hitherto only known that irritation of the cervical spinal cord produced contraction of the uterine arteries. According to Basch and Hoffmann, the vaso-constrictor nerves of the uterus run in the hypogastric nerve, irritation of which caused the blood to be driven from the arteries into the veins. The contrary effect followed irritation of the sacral nerves; there was considerable dilatation of the vessels, ecchymoses took place on the mucous membrane of the uterus, and new vessels became visible.

April 13. *Enucleations of a Fibromyoma from the Uterus of a Parturient Woman.*—Dr. Funk described a case. He first noticed the rarity of the combination of pregnancy with fibromyoma, which he attributed to the fact that the presence of such a

tumour did not readily allow conception to take place, since the uterine mucous membrane was in an abnormal condition. He also spoke of the changes which the new growths underwent when conception took place. The tumours became larger, more succulent and rich in blood, and were flattened by the pressure of the pelvis and uterus. During labour, they were subject to mechanical insult, and, in consequence, underwent retrograde (fatty) change. The influence of fibromyoma on pregnancy was described as being various, and too often deleterious. In many cases, pregnancy and delivery ran a normal course; in many, labour had to be completed by artificial means in consequence of slow dilatation of the os uteri, faulty position of the child, or want of room. The removal of the placenta was often impeded; and dangerous hæmorrhages were always to be feared. The diagnosis was often attended with much difficulty, as was illustrated in the following case which Dr. Funk had lately had under notice. A woman, aged 40, who had hitherto enjoyed good health, menstruated first in her seventeenth year, and afterwards regularly. At the age of 23 she married; she was confined for the first time in her thirtieth year, and twice afterwards with intervals of about two years. The labours were normal. Her fourth pregnancy and labour ran a normal course; but *post partum* hæmorrhage set in and could not be arrested. Dr. Funk, who was called in consultation, found a membranous growth in the vagina. Having introduced two fingers into the uterus, he proceeded to remove what he supposed at first to be the remains of a placenta; but brought away easily a mass of the size and shape of a placenta, and having a whitish grey reddish colour. On microscopic examination, it was found to be a fibromyoma, the elements of which had here and there undergone fatty degeneration. The hæmorrhage was arrested; nine days later, there was a purulent discharge, but the patient had no fever. She recovered slowly; and, after three months, menstruation returned and continued normally. Regarding the treatment of such cases, Dr. Funk remarked that the tumour must be at once removed when severe hæmorrhage has set in, or when the capsule of the tumour has burst; in the latter case, because the access of air easily gives rise to decomposition of the tumour, and consequent pyæmic infection.

April 20. *Lister's Treatment of Wounds.*—Dr. Dittel read a paper on the results which he had obtained from the employment of Lister's antiseptic treatment since November 1875, in the cases of 129 patients. He arrived at the following conclusions. Lister's dressing has a beneficial effect on the arrest of hæmorrhage and on the reaction of the wound. In many cases, it leads to total or partial healing by the first intention; in others, it is less successful, and a relatively open treatment of the wounds has to be employed. It appears to be quite unsuited to injuries of certain tissues; viz., in wounds where thick lobes of fat have to be brought together, or where the removal of tumours leaves a large cavity in a thick panniculus adiposus. In such cases, erysipelas is liable to occur from decomposition of fat. In central diseases of bones, also, the results of Lister's methods are not successful; healing by granulation and cicatrisation taking place more readily under the open treatment. In cases where healing by the first intention has not been obtained, Lister's dressing exercises a favourable influence on the process of granulation. It affords a protection against accidental traumatic diseases; eczema

and pyæmia are more rare; but erysipelas is relatively more frequent. Dr. Dittel attributed this to the liability to retention of pus in the wound by dressing. Lister's dressing is to be replaced by others: 1. When healing by the first intention is complete; 2. When it has completely failed; 3. When the wound has assumed a diphtheritic appearance which cannot be removed by solution of chloride of zinc. In conclusion, Dr. Dittel remarked that Lister's dressing is one of the best antiseptic methods known, and that it is worth the trouble to learn in what cases its use is indicated, and for how long it should be applied.

*Eczema Marginatum.*—Dr. Hebra exhibited a case of eczema marginatum, which in some parts showed very distinctly the formation of vesicles filled at first with clear lymph, and afterwards with a yellowish fluid. Having described and illustrated by drawings the different ways in which this disease originates, he said that it was caused by wet applications to the skin, causing maceration of the epidermis, and giving an opportunity of proliferation to the fungi always present in the linen. He was still of opinion that these fungi did not differ in individuality, but only varied in form; and this explained how from eczema marginatum, herpes tonsurans might be developed, and from this again favus.

April 27. *Empyema in a Child.*—Dr. von Winiwarter showed a child, a girl, aged 3½, in whom empyema had been treated by drainage of the pleura. She was admitted into hospital on January 6 with empyema of the whole of the left pleural cavity, following pleuropneumonia. The heart's impulse could be felt in the right nipple-line. The child was much emaciated. The extremities were oedematous; the evening temperature often rose to 39 per cent. (102.2° Fahr.) Dr. von Winiwarter at once made an opening about an inch long in the intercostal space where the pus seemed to be approaching the skin, emptied the pleural cavity by a siphon-apparatus, washed it out with a one-per-cent. solution of carbolic acid, and applied Lister's dressing. The next day, the patient was free from fever. The removal of pus was effected by daily injection. At the end of a fortnight, a portion of a rib was excised, as it impeded the escape of the pus. On April 15, the fistulous opening was closed. The left half of the thorax had quite regained its normal character.

*United Twins.*—Dr. A. Wolfbeiss showed a specimen of malformed twins. He was called on April 7 to a pregnant woman, the mother of eight children. Labour commenced at 8 A.M.; the liquor amnii escaped at 10; and, at about a quarter before 12, a head and an upper extremity presented, and were said to have shown signs of life. When Dr. Wolfbeiss saw the patient at half past one P.M., he found a head and two extremities presenting, both cold. The fact that the parts were immovable and impacted, as well as the presence of a third upper extremity and an abnormal arrangement of the umbilical cord, led him to conclude that the case was one of monstrosity. Having effected delivery, he found the two children together to weigh 4,650 grammes (about 10¼ lbs.); they were females, and were united about the epigastric region by a bridge formed by the xiphoid processes, the cartilages of the ribs, and the muscular structure of the abdominal wall. The thoracic organs, which were perfectly distinct, were well developed and normal; both lungs were unexpanded. The abdominal viscera were also normal; but the livers passed into each other, so that not even a septum could be discerned.

May 4. *Fibroma of the Liver.*—Dr. Chiari showed a fibroma of the liver from a woman, aged 56, who, at the beginning of this year, had died in the General Hospital with disease of the heart. Along with disease of the tricuspid valves, there were numerous menorrhagic infarcts in the liver, spleen, and kidneys. The liver was much atrophied, weighing 1,050 grammes (2¼ pounds): Glisson's capsule was thickened, and had contracted adhesions to the peritoneum. At the under surface of the right lobe of the liver was a prominent swelling as large as an orange, covered by the capsule and by a portion of the parenchyma of the liver. On section, it appeared to the naked eye to have a fibrous structure, and to be nearly white with some yellow spots. On microscopic examination, it was found to contain abundant connective tissue with only a few nuclei, and masses of bile-pigment. The few vessels of the tumour were in direct connection with the hepatic vessels. Dr. Chiari remarked that fibroma of the liver was very rare. He had found in medical literature only one case, described by Luschka; and in this the tumour in the liver was the result of a hæmorrhage, around which proliferation of connective tissue had taken place. Dr. Heschl had several times found growths of the kind as large as hazelnuts. In the present case, there was apparently hyperplasia of the capsule surrounding a hæmorrhagic infarct, followed by formation of a fibroma.

*Obturator Hernia.*—Dr. Chiari showed the pelvis and intestine from a woman, aged 84, who had died in the Jewish hospital with symptoms of internal strangulation. Towards the lower end of the small intestine was a hole more than an inch long, through which pus had escaped; and a portion of the intestine was strangulated between the upper portion of the obturator externus and the horizontal ramus of the pubic bone.

*Ovarian Cyst: Separation of the Uterus near the Os.*—The case was described by Dr. von Dumreicher and Dr. Heschl. In a woman aged 31, who had been confined 8½ years previously, a hard tumour was found on the right side near the umbilicus. At the same time, the resonance on percussion varied with changes of position, so that it was thought that there was an ovarian cyst with ascites. By puncture, a large quantity of sero-sanguinolent fluid was removed. On April 22, ovariectomy was performed. When the abdomen was opened, from 10 to 15 litres of clear yellow viscid fluid escaped; and a fibroma and cyst were seen, over the latter of which a band passed towards the left, which was afterwards recognised as the left Fallopian tube. The cyst burst, and discharged an ichorous fluid; it was removed, together with the supposed fibroma, which, on examination, was found to be the uterus, separated at some previous period from the cervix. The patient died the next day from peritonitis.—Dr. Heschl described the specimen exhibited. There was a multilocular ovarian cyst, leaning to the left, and, posteriorly, a lacerated opening. On the right side, there lay in connection with the left Fallopian tube (which was stretched over the tumour) a triangular body, consisting of the uterus, still connected with the right ovary by the corresponding Fallopian tube, and some fibres of the broad ligament. It seemed as if the separation of the uterus had been procured by the twisting of the tumour on its axis. The pathological museum at Vienna contains a specimen of myoma connected by a long pedicle with the body of the uterus, which was attached to the cervix by only a thin thread of tissue.



*Sterility.*—Dr. Mayerhofer recognised three kinds of sterility; *impotentia generandi, gestandi, et ingravescenti.* The last form was described by him as consisting in impossibility of development of the ovum after normal conception. This condition is not rare, and is especially caused by endometritis and processes which produce secondary changes in the uterine mucous membrane. It may also arise from the ovum falling into the peritoneal cavity instead of the uterus. With regard to the treatment of sterility, Dr. Mayerhofer remarked that dilatation, incision, and dissection of the cervix, which were usually performed with the view of widening the contracted os uteri and allowing the entrance of spermatozoa to the uterus, did not, when occasionally successful, act in this way, but by allowing the full escape of the uterine and catamenial secretions, and the recovery of the mucous membrane of the uterus from any morbid conditions by which it might be affected.

## SIXTH CONGRESS OF THE SOCIETY OF GERMAN SURGEONS.

April 6. *Swallowing of Artificial Teeth.* *Œsophagotomy.*—Dr. von Langenbeck related the case of a woman who, in a fit of epilepsy, had swallowed her artificial teeth. *Œsophagotomy* was performed for their removal. They were found wedged between the cricoid cartilage and the spine, with their lower surface upwards. They were removed by the forceps, after being tilted up by an elevator. The patient was discharged cured twelve days after the operation.

*Cleft Palate.*—Dr. von Langenbeck also showed a patient on whom, on account of complete congenital cleft of the hard and soft palate, he had performed *uranoplasty* and *staphyloraphy*. The result, as regarded speech, was very satisfactory.

*Blepharoplasty.*—Dr. von Zehender showed a boy aged five, who had had a high degree of ectropium of both upper eyelids, in consequence of caries of the roof of the orbit. Dr. von Zehender had operated on the right eyelid three weeks previously, by transplanting from the arm a piece of skin 6 centimetres long and 3 centimetres broad (2½ ins. by 1½ in.) He said that the transplantation of portions of skin of such size was not often successful, and believed that their union could only be secured by previous preparation. All the fat and loose connective tissue was carefully removed from the piece, leaving only a perfectly smooth, white, and firm surface. This operation had been first recommended and performed successfully by Wolfe of Glasgów, and after him Wadsworth of Boston had, also with success, performed *blepharoplasty* by transplantation of a large flap of skin. These cases must be distinguished from those operations in which defects in the eyelids were remedied by multiple transplantations. So far as Dr. von Zehender knew, his case was the only one in which the operation had been performed on the upper eyelid.—For the purpose of comparison, Dr. Schede showed a woman in whose case he had, six months previously, treated ectropium of the upper lid by transplanting six pieces of skin. Large pieces of skin had already been transplanted in *blepharoplasty* by Lefort in 1870 and 1872, by Sichel in 1874 and 1875, and by others. Transplantation of small portions of skin to remove defects in the lids had been repeatedly performed; but, with the exception of the case now related, successful transplantation of a piece of skin

with a surface of about two square inches was as yet unknown.

*Excision of the Knee-joint.*—Herr König of Göttingen said that a large share of the failures in resection of the knee-joint, on account of fungous disease, was due to the neglect of the upper pouch, formed by the synovial membrane behind the extensor tendons in the anterior surface of the thigh. If a transverse incision were made, and joined at both ends by vertical incisions, and if a flap were then dissected up as far as above the patella, the synovial pouch would be laid open on dividing the tendon of the quadriceps extensor. By drawing on the patella, the adhesions of the pouch were readily broken down. The flap could then be brought into direct union with the surface, from which the synovial pouch had been removed, and secured by Lister's dressing applied in the manner used by Volkmann. In place of an interrupted plaster of Paris bandage and a bent iron splint, Herr König used a triple splint, of which the middle part was removable.—Dr. Volkmann described this method of operation and the results. He showed a girl aged ten, on whom he had performed complete resection two and a half years previously. There was miliary tubercle of the capsule of the joint, which was entirely removed; carious abscesses in the femur were scooped out, and in three weeks the wound was completely healed, without leaving any fistulous opening. Formerly, the mortality in excision of the knee-joint was great; recovery was tedious, fistulæ remaining for months. All this had been changed since the introduction of the antiseptic method. Within the last three years, Dr. Volkmann had operated on twenty-one patients; of these, one only had died from miliary tuberculosis, and in two others secondary amputation of the thigh became necessary. Tubercular disease of the synovial capsule was specially unfavourable; but in spite of this, after complete extirpation of the capsule, healing had taken place in sixteen or eighteen days. Abscesses did not give much trouble. When fistulæ were present, they somewhat delayed union. In cases of this kind, Dr. Volkmann recommended the elliptical incision round the patella; the longitudinal incision he reserved for excision on account of injury, as with it extirpation of the synovial capsule was not possible. As there was generally much softening of the bone, the amputating-knife might be used for its removal. The epiphyses were fastened together by catgut sutures, and became united in four or five days. In cases of the purely synovial form, the disease having its origin in the bones, extirpation of the synovial capsule was sufficient. Volkmann hoped to be able to obtain movable joints by the use of Lister's dressing. Under this treatment, ankylosis was later and less pain; and displacement was avoided, which had caused the failure of many of his earlier operations.—Herr König had formerly strongly recommended resection of the knee in children; but he had found great shortening in all cases. In a child three years old, with tubercle of the synovial membrane and of the patella, drainage-tubes were applied; the result was apparently good, but death occurred from general tuberculosis. In children, resection was not followed by bony ankylosis, but by a cartilaginous union, which allowed motion, and especially flexion.

*On Malignant Degeneration of Benign Tumours: and on the Treatment of Cancer.*—Dr. Esmarch said that he had often seen cancer developed from *atheroma* of the scalp in young individuals, and also from ulcers of the leg and lupus of the face. It was also known that the affection frequently called *psori-*

asis linguæ very frequently became malignant with advancing age. Cicatrices, especially those of lupus, he had observed in recent years often to become carcinomatous. A man was admitted into his clinic suffering severely from lupus. Under the energetic use of chloride of zinc, the disease was cured to a great extent; but the face presented much the appearance of elephantiasis. The nose was destroyed, and the lower eyelids were eroded: Dr. Esmarch remedied these defects by plastic operations. The man obtained a situation as a coachman, but became addicted to drink, and fell into vices of all kinds. Seven years later, he had cancer of one eye, which spread rapidly to the skull, and caused death in two months. In a second case, a student of theology had suffered in his childhood from lupus: his father had died of a tuberculous or scrofulous affection. He had neglected himself from time to time, and had at intervals been subjected to energetic treatment. Dr. Esmarch first saw him in 1859, when he was 38 years old. In 1862, the cheeks and a part of the lower lip were destroyed by horrible cancerous ulcers, the chest was covered with circular ulcers, and he soon died. Drawings of three cases were shown, in which cancrroid disease had become developed from old or unhealed ulcers on the legs. In the face of such facts, surgeons would do right to inquire into conditions under which previously benign new growths or processes became malignant. It was known, indeed, that repeated irritation might produce malignant growths, as in cancer of the lower lip from the abuse of bad tobacco, cutaneous cancer from soot, paraffin, etc., and uterine cancer from irritation of the vagina. In many cases the irritant could be detected; but in others no information could be elicited from the patients, even by the closest examination. The question then arose: Do not the scrofulous and syphilitic dyscrasias play a part? Dr. Esmarch had been led to the conclusion that an hereditary dyscrasia of the kind mentioned predisposed to malignant growths. It was difficult to decide this; but, by perseverance, valuable diagnostic information might be obtained from patients. In recent years, he had taken much trouble in cases of lupus, caries, and joint-disease, to inquire into the hereditary conditions of the patients, and had found an hereditary taint in most cases. The best information on questions of this kind might be gained from old practitioners who had resided long in the same district, and knew the history of families through several generations. As regarded the treatment of cancer, it was well known that many malignant growths were capable of cure by early and sufficient extirpation: but in very many cases the patients came too late to allow an energetic radical cure to be carried out. Dangerous tumours were often treated by insufficient means, and allowed to become malignant; and then the patients came to the surgeon, who was obliged, to his regret, to perform a difficult operation. What was to be done in cases no longer fit for operation? To tell the patients that nothing more could be done in the way of operation, was to pronounce their death-warrant; but there ought to be a final remedy to be used in certain cases. Langenbeck, of Göttingen, had under his care a woman with cancer, for whom he ordered arsenic: the woman, believing that she could not recover, took the arsenic in large quantities for the purpose of suicide: the result, however, was the cure of the disease. Cancer was essentially an epithelial growth; and the therapeutic action of arsenic on skin-diseases indicated that it

must have a special influence on the epithelial cells. Arsenic was also given to horses to make their skins smooth. Hence there was a reason for using arsenic in cancer; but it must be given in large doses to produce any result—even until symptoms of poisoning were produced. In this way Dr. Esmarch had produced astonishing results in some cases of cancer. One woman, who had a cancer of the lower jaw, too far advanced for operation, was completely healed by the use of arsenic. Modern experience of the action of arsenic in other maladies encouraged a trial of its action in cancer. The reputation of arsenic in this disease was of old date; but Dr. Esmarch had been led to employ it energetically in hopeless cases, and with surprising results. He showed the photograph of a woman, who as a child was scrofulous. She had scrofulous glands in the neck, which during her pregnancy developed into a lupous sarcoma. Extirpation of the whole disease by the knife was impossible; Dr. Esmarch therefore cut away the tissue of the face, and laid charpie soaked in chloride of iron on the remaining diseased portions: he then applied a powder of morphia and arsenic with some calomel and sugar. A thick leathery eschar was formed, after the falling off of which cicatrization soon took place. Another woman came into his clinic with cancer of the breast, in which adhesion to the ribs had taken place. Dr. Esmarch prescribed arsenic internally, and for external application the powder above-mentioned, to be applied daily; this she must at last have done by teaspoonfuls. In the next session, she returned; all traces of the cancer had apparently disappeared, and she said that she had but slight pain. Besides its destructive action on growths, arsenic was also an antiseptic. Dr. Esmarch had also obtained some remarkable results in his practice from Canquoin's chloride of zinc paste, and from electrolysis. In a case of small-celled sarcoma of the thigh, as large as a man's fist, electrolysis by a weak current applied six hours daily almost completely removed it; but the man would not wait. A year later he returned, without a trace of the tumour. There was one class of malignant diseases in which Dr. Esmarch had obtained some remarkable results from the use of iodide of potassium. Many years ago, a case was reported from Langenbeck's clinic, in which a large sarcoma was cured by iodine inunction and the internal use of iodides. Soon afterwards, Dr. Esmarch removed a large tumour on the back of a man's thigh. It was a kind of myxosarcoma, small-celled, and proceeded from the sciatic nerve. The whole tumour was removed; the wound healed with suppuration. Diffuse sarcomatous swellings then appeared, and required extirpation. This was done three and a half months after the first operation. The wounds healed rapidly; but, four weeks later, a nodulated swelling occupied the whole gluteal region, and Dr. Esmarch, feeling that nothing could be done in the way of operation, sent the man to his home, writing at the same time to an old fellow-student in practice there to give him from two to four drachms of iodide of potassium daily. Twenty-two months later the man, on whom disarticulation at the hip-joint had been performed, came to Kiel to be fitted with an artificial leg. He had taken four pounds of iodide of potassium, using four drachms daily, and employed iodine inunction externally. The sarcoma had disappeared. After his return home, however, numerous painful tumours appeared over his whole body, and he soon died. On inquiring of his family medical man, Dr. Esmarch learned that disease of the kind



was of very frequent occurrence in his family. A sister had had a large tumour, which returned after removal, and was finally cured by the use of mercury. There was also syphilis in the family. The question then arose, were not such tumours connected with syphilis? This was not impossible. The products of old tertiary syphilis were not all known. New ones were constantly found, and they had great resemblance to sarcomata. Modern experience showed that there were many forms of sarcoma and sarcomatous growths, most of which were connected with syphilis of old date. Psoriasis of the tongue was sometimes, though not in all cases, connected with syphilis. Dr. Esmarch had operated last year on a man who had suffered for many years from psoriasis of the tongue, and in whom a portion of the gum had become affected with malignant disease. He had a chancre thirty years before. A course of anti-syphilitic treatment arrested the tendency to epithelial proliferation. Rodent ulcer belonged to the same category. There were many cases in which cancer was supposed to exist, when it was really a syphilitic product; and Dr. Esmarch frequently had such patients sent to him for operation. To show for how long a time the syphilitic influence might remain, Dr. Esmarch said that one of his colleagues brought to him a venerable old gentleman, from whom he had some months previously removed a cancrroid growth, which had developed on a wart. On inquiry, it was found that he had had a chancre forty years before. He recovered under energetic iodine treatment, by inunction and the internal use of iodide of potassium. Dr. Esmarch also referred to a case of rodent ulcer, recurring after operation in a lady, whose husband had been syphilitic, and to one of cancer of the lower lip in a man who had had a sore on the penis four years previously. In the first case, a course of chloride of mercury arrested the tendency to recurrence; the second was cured by iodide of potassium. Dr. Esmarch concluded his remarks by insisting on the necessity of using the microscope as a means of diagnosis.—The discussion on Dr. Esmarch's communication was deferred to next year.

## REVIEWS.

*Recherches sur les Centres Nerveux; Pathologie et Physiologie Pathologique.* Par le Dr. V. MAGNAN, Médecin de l'Asile le Ste. Anne, etc. Paris: G. Masson, 1876.

The ten separate papers which make up this volume may be conveniently referred to three heads—1, the pathological anatomy of general paralysis; 2, alcoholism; 3, statistics of insanity.

Dr. Magnan devotes his first few pages to an histological description of colloid changes in the brain, observed in a small proportion of cases of general paralysis. Under certain ill-understood influences, the products of cell-proliferation, instead of maturing into fibrous tissue, lapse into the colloid state. Colloid degeneration first attacks the middle layer of the cerebral cortex, where vessels and cells are most abundant. The deep layer suffers next, and lastly the upper stratum. The change begins in the vessels, nuclear proliferation pervades the vascular wall, and fills the perivascular sheath, and the new material rapidly assumes colloid characters. The section of a diseased vessel generally presents an inner fibrous ring, encircled by concentric layers of

colloid substance. This is often marked by cracks and furrows. It is not uncommon to find the wall of the vessel exceeding in thickness the diameter of its lumen.

The cells are also subject to colloid change. In them the nucleus is first affected; many cells of the middle cortical layer were caught in this intermediary stage. But, at a later period, the whole cell has become transformed into a small bright transparent body, easily stained by carmine, and plainly differing in its reactions from the fatty, the amyloid, and the amylaceous substances.

Dr. Magnan gives in a second paper the results of his examination of nine brains, in which the interstitial changes of general paralysis had acquired special development at the surface of the ventricles. This had become coarsely granular, the projections consisting of fibroid material. At many places the epithelium had disappeared.

After a brief review of the leading opinions, at various times entertained, as to the pathology of general paralysis, the author discusses the subject in the brighter light of modern research. These are some of his conclusions. 1. Naked-eye appearances of the brain are not to be trusted as a sure guide to *post mortem* diagnosis of the affections. 2. The pathotypic change, easily recognised by the microscope, is a nuclear proliferation of the connective tissue throughout the organ. To this may be added parenchymatous degenerations, such as fatty metamorphosis, softening, formation of lacunæ; all, however, secondary to the interstitial disease. 3. The cord usually participates in the same change, especially when the disease has a slow progress. Among the abnormal complications incidental to general paralysis, are mentioned locomotor ataxy and nerve-scleroses. These are probably to be viewed as local accentuations of a general morbid tendency.

Perhaps the most interesting paper in the series is the comparative study of the actions of alcohol and of essence of wormwood, administered to dogs in continued doses. Rapid inebriation follows each dose of alcohol. After fourteen days the animal's temper becomes irritable, nocturnal hallucinations supervene towards the twenty-fifth day, and, after a month, persistent delirium. About this time are observed tremors, first affecting the hind limbs; gradually the forelimbs are involved, and lastly the whole body. After three months of daily intoxication, death follows. The other symptoms, as well as the organic changes, are the same as in man.

In feeble doses, the essence of wormwood produces vertigo and muscular subsultus in the forelimbs. Delirium and epileptic attacks invariably follow the large doses. During the convulsive stage of the fit, Dr. Magnan noted dilatation of the pupil and intra-ocular congestion—an observation exactly opposed to the prevalent theory as to the epileptic mechanism. Prior ablation of the cerebral lobes (in birds) did not prevent the accession of the fit. When the spinal cord had been divided below the medulla, essence of wormwood, injected into the veins, first induced an attack of "bulbar epilepsy" (tonic and clonic contractions of the muscles of the head, foaming at the mouth), soon followed by a spinal attack. From these experiments flows the important conclusion that, in the production of the epileptic attack, every segment of the cerebro-spinal axis has its independent share.

In the next paper we find a good clinical picture of the intellectual and sensorial disorders in the acute form of alcoholism and in the chronic. Alcoholic

hemianæsthesia forms the subject of a separate essay. The alcoholic degenerations tend towards two extreme conditions: 1. Fatty metamorphosis and atrophy; to this corresponds dementia: 2. Interstitial disease of the brain: this is the lesion of general paralysis. Dementia is the more common result, coupled with atrophy of the cortex, hæmorrhagic or softened foci. These may lead to the most varied symptoms, according to their position; amongst others to hemianæsthesia. The loss of sensation is not simply cutaneous, but extends to the mucous surfaces, and into the deeper parts. A similar hebetude falls upon the senses; vision may be entirely extinct; but, unlike the pupil of hysterical hemianæsthesia, the blind pupil here responds to light. According to Longet and to Vulpian, sensory perception resides in the pons. Todd and Carpenter place it in the optic thalamus. Dr. Magnan finds for it a third site, not far from either, the posterior part of the internal capsule.

The third part contains interesting statistics on the comparative frequency of various forms of insanity during the late French wars, and during equal periods of peace. After Dr. Magnan's own comments on the total subversion, in those days, not only of the social, but of the hospital system, it seems impossible to find in hospital returns the elements of any proof. Yet this chapter will interest the reader, and the book, as a whole, will repay perusal. WM. EWART, M.B.

*Etude Anatomique, Physiologique, et Clinique, sur l'Hémianesthésie et les Tremblements Symptomatiques.* Par le Dr. F. RAYMOND. Paris; A. Delahaye et Cie., 1876.

The study of hemichorea is the leading theme in this valuable contribution to nervine pathology. Hemianæsthesia also receives a large share of attention. Tremors occupy in the work a subordinate position, acting chiefly as a set off to the choreic forms of disease.

Clinical and anatomical facts are Dr. Raymond's materials. A few experiments on animals, which are reported at the end of the volume, add but little to the weight of clinical proof. Neither, it is true, do they introduce any result inconsistent with conclusions drawn clinically. In so far, they are not without some value.

The observations of hemichorea reported in the book amount in all to thirty-five. In fourteen of these cases a *post mortem* inspection was made, and every time the lesion was found to occupy the same region. It is on this foundation that Dr. Raymond builds.

Without a good anatomical description of the parts concerned, the author's views might have been imperfectly understood; but in this respect the reader is favoured. He is introduced forthwith *in medias res*. Three points are insisted upon by Dr. Raymond. 1. Meynert has demonstrated the existence, at the posterior part of the internal capsule, of a bundle of sensory fibres from the posterior pyramids passing directly upwards, through the corona radiata, to the cortex of the posterior lobe. 2. From careful pathological observations, it is argued that, similarly a direct bundle of motor fibres leaves the corona radiata to pass into the anterior pyramids. 3. The fibres belonging to the nerves of special sense are projected, as it were, upon the cortex of the posterior lobe, passing through the posterior part of the internal capsule.

These facts being granted, a lesion affecting the

back part of the internal capsule would presumably influence motion, sensation, and special sense. This inference is supported by clinical evidence. Disease residing in the posterior part of the corona radiata, at its base, be it hæmorrhage, softening, tumour, or congenital atrophy, produces either hemichorea or hemianæsthesia, or both. In every case there is a mild degree of hemiplegia, and where hemianæsthesia exists, the special senses are also involved.

From a comparative study of the exact limits of the lesion in cases of hemichorea with hemianæsthesia, and in cases where each affection occurred uncomplicated, Dr. Raymond was enabled to define still further the pathological regions. In both cases the base of the corona radiata at its posterior part is implicated, but in hemichorea those fibres suffer which lie immediately in front of, and somewhat externally to, Meynert's bundle of sensory fibres.

It results from Dr. Raymond's observations that hysterical hemianæsthesia is always coupled with perversion of special sense, and, further, that hysterical hemichorea is sometimes complicated by hemianæsthesia. Again, in a few cases where hemianæsthesia was the result of chronic lead poisoning, perturbation of vision and choreic movements have been noted. So striking a connection between three phenomena, each of which in itself is a rarity, induces the author to believe that, as in apoplectic, so also in hysterical and saturnine hemichorea, the lesion may be with certainty referred to the posterior part of the base of the corona.

Dr. Raymond pushes induction one step further. The mode of production of the common form of hemichorea has never been satisfactorily explained. Would it be unreasonable to suppose that in these cases the change, whatever be its nature, has its seal in the same region, which in rarer instances is concerned in the joint symptoms of hemichorea, hemianæsthesia, and hemiplegia?

The diagnosis between hemichoreic movements and the unilateral tremors, forms the subject of the last few pages. A confusion could not easily arise between the trivial hemichoreas, and hemichorea dependent upon grave cerebral disease. The former affection is nearly special to childhood; the latter is the exclusive appanage of advanced life (excepting rare cases of intracranial tumours, or of partial congenital brain-atrophy, which may lead to lasting hemichorea).

Hemichorea, in its connection with hemiplegia, may occur at two distinct periods, either immediately before the onset of hemiplegia or months after the attack, when power is returning into the palsied limbs. In the former case the hemichorea is evanescent, lasting at most a few days, and entirely disappearing with the advent of hemiplegia. The posthemiplegic form of chorea is permanent. Both furnish important elements of prognosis. A sudden invasion of hemichorea in the old portends hemiplegia, whilst hemichorea, growing out of a confirmed hemiplegia, is a clear index that the brain has suffered irremediable change.

WM. EWART, M.B.

*Studien über den Nervus Vagus. Ein Beitrag zur Lehre von den automatischen Nervencentren und den Hemmungsnerven.* VON Dr. OTTOMAR ROSENBACH, Assistent- Arzt der med. Klinik zu Jena. Berlin: Aug. Hirschwald, 1877.

This little book of 150 pages is likely to make a lasting impression on the physiology of automatic centres and of inhibitory nerves. Dr. Rosenbach's



remarks on the vagus are not all novel ; many of his experiments are mere repetitions of those which may be termed classical, yet the sum of his conclusions is new. The view which he takes of the functions of the vagus is together so simple and so rational that it may well force itself into general acceptance, unless overthrown by some better theory. Not the least interesting feature in the book is the subtle reasoning by which conclusions are formed, extended, or even reversed, according to the march of experimentations. Whilst apologising for apparent confusion in the plan of the work, the author deems it fair to submit to the reader, not his facts and deductions alone, but also his thinking. The extension which the book suffers in consequence is cheerfully forgotten, in consideration of the object attained—thorough clearness and faultless philosophy.

Dr. Rosenbach's starting point was the idea, first propounded by Hering and Breuer, of a "self-steerage" of respiration. Their fundamental experiments, consisting in a permanent inflation of the lungs of a living animal, which induces a long respiratory pause, interrupted for a time by a few abdominal contractions, and ultimately followed by an inspiration, were carefully repeated and minutely analysed. Dr. Rosenbach confirms Hering and Breuer's main conclusions—viz., that mechanical distention of the lung, which is equivalent to an inspiration, acts as a sufficient stimulus for an expiration ; and that collapse of the lung, artificially produced by puncture of the pleura, is a mechanical incitive to an inspiration ; thus the very movements of the lung regulate the pulmonary function. But he disagrees with them as to the nature of the abdominal contractions mentioned above. These are not actively expiratory, but rather the after result of over-distention of the abdominal walls, and, being indeed accompanied by an inspiratory expansion of the *alæ nasi*, are probably in some way connected with an inspiratory effort of the diaphragm.

A careful review of the various theories of respiration leads Dr. Rosenbach to admit the following propositions as proved beyond question. 1. Respiration is influenced by the nervous centres in the medulla. 2. The quality of the blood circulating in the medulla is the exciting agent. 3. Irritation of the cutaneous and other peripheral nerves is unable to produce inspiration, though it may be followed by expiration. The part taken by the vagus has been so variously interpreted, and has been the subject of such contradictory experimental demonstrations, that we feel less astonished by Dr. Rosenbach's statement that this nerve has no direct share in the production of either inspiration or expiration. According to him it is an inhibitor of inspiration ; its irritation produces an expiratory pause (this is a complete reversal of Rosenthal's theory, which admits an inhibitory centre capable of being counteracted by vagus stimulation, and rendered more active by stimulation of the superior laryngeal). Accordingly, complete section of the vagi would lead to unchecked inspiration, or inspiratory tetanus ; their central irritation to an inhibitory apnoea.

To explain the nature of inhibition, an ingenious theory is proposed. Inhibition would resolve itself into a mere question of blood-supply to the motor centres ; inhibitory nerves into simple vaso-motor agents. Of these, the vagus would be the type. If centripetally irritated in the lung, it would produce an alteration in the size of the vessels in the medulla. Dr. Rosenbach even ventures to surmise that vaso-motor influence may be conveyed in an opposite

direction, namely, centrifugally to the heart ; and that the retardation of the heart's action under stimulation of the vagus may be the simple result of intracardial vaso-motor action.

To this theory cannot be denied the merit of simplicity. It dominates at one stroke a troublesome unknown quantity, the phantom centre of inhibition ; it co-ordinates into an unbroken chain an unphysiological host of independent centres ; and it explains, by mere differences in the degree of vaso-motor functions, the sequence constantly observed in experiments, tranquil breathing being gradually forced into dyspnoea, and dyspnoea growing into general convulsions. As a theory, it recommends itself for admiration, but it remains a theory. Dr. Rosenbach fails to show wherein consists the great agent of stimulation ; whether lack of oxygen or an excess in the blood of some effete product, is the electromotive force in his automatic battery. He decides in favour of the latter view, chiefly, it seems, to suit the requirements of his case. Suppose the vagus endowed with the common form of vaso-motor function, that of a vascular constrictor, and stimulation of the medulla is best explained by an increased amount of some irritating substance in its vessels, inhibition by a decrease. His elaborate discussions on this point have little more weight than a statement of opinion. As to the value of the experiments, the test of numerous repetitions can alone decide. The account given shows them to have been accurate. In conclusion, although it can scarcely be said that the intricate knot has been divided at one sweep, after reading Dr. Rosenbach, we feel more confident that it may yet be untied.

WILLIAM EWART, M.D.

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*Historisch-kritische Studien über Vererbung auf Physiologischem und Pathologischem Gebiete.*  
Von Dr. EMANUEL ROTH. Pp. 77. Berlin : August Hirschwald. 1877.

In his preface, the author states it to be his aim to collect the scattered data relating to heredity, and to bring about further investigations and a renewed discussion of the subject.

A belief in the principle of hereditary transmission can be traced in the earliest records. In the younger days of humanity, the breeding of cattle was only regulated by an unconscious selection. The value of discrimination was recognised by the ancients, but Buffon was the first to point to crossing as a systematic means of improving the species. His views found strenuous opponents in the supporters of interbreeding, Backwell and Thaer. The principle of heredity did not, however, escape complete negation ; some adopted it partially, excluding from its influence the individual peculiarities, and recognising the typical qualities only as hereditary. Foremost among the holders of this view was Buckle.

Countless theories were put forward in antiquity and in the middle ages to explain the reappearance in the offspring of parental characteristics. According to the latest view, that of Darwin, which strangely enough, is in essence identical with the doctrine of Democritus, the whole organism is pervaded by germs whose tendency it is to aggregate and to build up the generative element, spermatozoon or ovum. In the young organism these germs disperse in the strictly reversed order to that in which they originally coalesced, and thus they are passed on by means of serial reproductions from cell into cell. They need not, however, all attain their full develop-

ment in every successive generation, though all are transmitted.

A satisfactory explanation of the origin of individual peculiarities is still wanting. Close interbreeding favours variation, according to Darwin. Conditions of life have their influence, but this influence depends as to its degree on the constitution itself. Some animals are in this respect more plastic than others, the domesticated, as a rule, more so than the wild. Another element of variation is, according to Darwin, the impression made by every fecundation on the ovary itself and its unshed ova. Nägeli seeks to explain variations by a tendency to progress inherent in every organism; whilst Fechner locates this striving after greater perfection in the mind itself.

Of all organs, those of generation are the most sensitive of changed conditions of life. Many animals are incapable of reproduction whilst captive. In others, this so-termed potential adaptation finds its expression in departures from the original type, either in the bodily formation or in the instincts of the captive brood.

What is the nature of the influence exerted on each other by ovum and spermatozoon? Electricity, magnetism, fermentation, have in turns been appealed to. The reigning theory is now that of direct chemical union. This may result in a preponderance of the one or the other element in the combination, or, as in a neutral salt, the evenly balanced components may merge into a third something utterly different from either.

In the domain of pathology congenital disease has to be distinguished from predisposition. Chronic local disease of any part appears to tell on the generative organs, thus determining hereditary taint. The same remark probably applies to the acute diseases, since after their passage the *status quô ante* is never thoroughly restored. Experiments performed by Brown-Séquard on guinea-pigs have proved that mutilations may be the subject of transmission through several generations, but these instances become less common the higher we ascend in the animal series.

Congenital predisposition need not coincide exactly with the parental disease. The constitution of the other parent interferes for better or for worse. Again, tendencies to local disease, for want of a determining occasion, may for generations remain latent. The dormant principle may be aroused into action by a variety of influences. The combination of psychical emotions with changed conditions of life probably explains why the breath of civilisation proves so deadly to savage tribes. Immunity from certain diseases, liability to others, as seen in the different human races, are chargeable to the same aggregate of circumstances which determine the national characteristics. In England the annual average of meat consumed per head amounts to 68 kilograms, in other countries only to 20; with this is correlated the greater frequency of calculus, gout, and aneurism among Englishmen. The Jewish race suffer less from scrofula, but are more prone to diabetes than the Christian population.

Immunity from disease is often congenital, sometimes it is acquired. Habit is capable of establishing a toleration for certain poisons, arsenic among others. Negroes and mulattoes are remarkably indifferent to the yellow fever poison. This is not, as Darwin once supposed, the result of a settled relation between the colour of the skin and the nature of tropical disease. Certain trades act as prophyl-

lactics. Tanners are nearly absolutely exempt from phthisis, and in a great measure from cholera. Cholera is nearly unknown among copperworkers.

Some of Darwin's experiments would show that morbid tendencies, if manifested in the parent before the age of puberty, are handed down to descendants of both sexes, if after that period to descendants of the same sex only. Häckel asserts the view that hereditary disease affects like parts of the body in parent and offspring; and Stahl is of opinion that the time of invasion is also determined by heredity.

Morbid principles are apt to become aggravated or to dwindle in their transmission. Davaine inoculated a series of rabbits with septic blood: after 25 inoculations from rabbit to rabbit, death was produced by a dose a million times smaller than the first. The genealogies of the insane afford a striking instance of the exacerbation of a diseased tendency. Close intermarriage has been accused of influences in a similar direction, but G. H. Darwin, the latest authority on the subject, has failed to obtain any absolute proof of a baneful effect. The bodily or mental condition of the progenitors at the time of impregnation is even nowadays considered by some as an important factor, although the balance of modern opinion is against such a doctrine.

In considering the influence of heredity on the development of the mind, the author rejects the doctrine of spiritualism which admits innate ideas, and also that of unalloyed sensualism. According to him, the functions of our senses, as well as the intellectual formulæ common to all mankind, derive their origin and their growth from the constant contact with the outer world, and have been confirmed by heredity. Elementary judgments as to the qualities of surrounding objects were the first results of repeated experimentation. But by degrees the human mind has learnt to jump at conclusions of a higher order. These short cuts in thinking, this condensed thought, are ascribed in part to inherited predisposition. A similar process of education, by dint of renewed experiments, has gradually developed egotism and socialism. As in animals particular forms of instinct, so in man mental predispositions are based upon a given molecular constitution of the brain.

The question as to the nature of intra-uterine life has exercised philosophers of all ages. Kussmaul proved that the senses of touch and taste are in activity before birth. Unlike the spinal cord, the brain of the newly born infant differs vastly in constitution from that of the adult. It contains a greater proportion of water; instead of a medullary sheath, its fibres are surrounded by embryonal medullary matter (an exception must, however, be made in favour of the tegmental part of the crus cerebri, which is in relation with the thalamus opticus and corpora quadrigemina, and through them with the organs of sense). Solttmann proved experimentally that the cerebral centres mapped out by Fritsch and Hitzig remain inert on stimulation at birth. At this stage, one of the anterior lobes can be removed in young dogs without any bad results; the cortical matter can even be sliced off from both anterior lobes without any actual motor disturbance, though development is thereby retarded. It would appear that the reflex mechanisms are in every respect perfect, excepting those which involve the cerebral cortex, this part of the brain being unavailable through the imperfect isolation of its conductors.

The author traces the development of conscious-



ness through various stages. A cloudy notion of its own body is the only strictly mental notion possessed by the newly born infant. The reflex action of drinking, carried on without obstacle *in utero*, is now inhibited; this brings into play the inherited mechanism of crying. Visual and tactile impressions give by degrees greater definition to the bodily *ego*. The daybreak of the mental *ego* is, as Kant says, the real moment of creation. Dr. Roth concludes his interesting but somewhat metaphysical essay with a picture of the gradual development of the infantile mind; not a new process, but a repetition of the childhood of humanity, with its idols, its bogies, and its toys. WM. EWART, M.B.

## NEW INVENTIONS.

### BRISTOWE'S CARBOLIC SOAP.

We have had before us samples of the carbolie soap of Messrs. T. P. Bristowe and Co., of No. 5, Bishopsgate Avenue, Camomile Street. The carbolie sanitary soap is made for hospital, infirmity, and general use. It is a thoroughly good soap, well made, and reliable in use for all the purposes of cleansing and disinfecting for which such soaps are used in the house, in the laundry, and in the hospital ward. It is largely used in infirmaries and hospitals, and may be strongly recommended for general employment. It is supplied at a low price to meet the demands of charitable and other institutions. A toilet carbolie soap is made for general toilet purposes; it contains a large percentage of carbolie soap in combination with good base soap free from excess of alkalis. The odour of carbolie soap is greatly covered by an agreeable perfume, and the carbolie acid used is of a pure and refined kind. For all those persons who are brought into contact with the sick, or who, for any of the many reasons that occur in public institutions in connection with sick room or in private life, desire to use a pure and reliable disinfecting soap, we know of none which we can more highly recommend than this. Carbolie soaps have proved themselves to be deserving of the popularity which they have attained.

### THE RESPIRATORY BRACE.

The following description of the respiratory brace by Dr. George F. French, of Portland, Maine, is taken from the *Boston Medical and Surgical Journal* for May 3rd.

Difficulty of breathing so extreme as to require the erect posture, or orthopnoea, is a feature of various diseases, but all alike send the same dispatch to the nerve-centres for more oxygen to aerate the blood. In some diseases, as in hysteria, the wires themselves are deranged, and the impression conveyed to the brain is exaggerated and fallacious; nevertheless the dispatch is believed at head-quarters, and all the vital power of the heart and lungs, reinforced largely by the voluntary muscular system, is at once ordered to the rescue.

Difficulty of breathing is made worse by the recumbent posture, on account of the pressure of the abdominal viscera, which gravitate against, and interfere with, the respiratory movements of the diaphragm. The erect posture, then, is most favourable for perfect respiration; but I believe it will be conclusively proved by this paper, that the recumbent position is not essential to the complete refresh-

ment of the body. In health, the advantage which would be gained in favour of respiration by the upright position, is more than counterbalanced by the muscular power wasted in counteracting gravitation; but if an appliance could be devised which would maintain the body erect without the slightest muscular exertion, sleep would be as refreshing as in the usual recumbent position. The upright position long maintained is very wearisome and exhausting. The persistent holding of the body in any fixed position implies a proportionate expenditure of muscular power, and all active exertion superadded to this, such as we observe in every form of difficult breathing, is as much more exhausting as it is laborious and painful; and when we consider that orthopnoea is often so extreme as to preclude sleep or nourishment, we can hardly estimate the depression of vitality which must ensue. The respiratory muscles languish, the heart propels the blood feebly, the nutrition of the body is in the same degree slackened, and the disease which has given rise to the orthopnoea, finding less resistance, tightens its grip at the throat of Nature. To one who has observed the effect of prolonged orthopnoea in cases of asthma this is no fancy picture. One of the most prominent features of every such case is exhaustion, and, I believe I might add, muscular exhaustion. The symptoms of non-aëration of the blood in asthma, as shown by the cyanotic countenance, do not manifest themselves till the muscles of respiration and circulation are exhausted; and the ill effects of severe attacks of asthma, such as the dilatation of the right side of the heart, the œdema of the extremities, and the debility that results from such a paralysis of all the vital forces, are traceable largely to muscular exhaustion. Next in importance, then, to the removal of the cause of any disease is the support of those forces which most effectually resist the disease, an universal maxim in therapeutics. In the orthopnoea of asthma, the greatest outlay of strength is in muscular exertion; the sufferer is conscious of this, and in every possible way economises muscular movement. No avoidable word, look, or motion escapes him; that position is chosen which will carry on forced respiration with the least effort; the head is never moved when a turn of the eyeballs will answer; and the elbows are planted on the knees or table to secure an advantage in elevating the shoulders. Every means of abridging muscular effort in orthopnoea tends inevitably, then, to aerate the blood, to promote nutrition, and sustain life. A most terrible source of exhaustion in orthopnoea is the loss of sleep; when the need of it becomes imperative, the sufferer nods first toward one side, then toward the other, which results in a waste of muscular effort to regain his equilibrium—this harassing process being kept up for hours, to the utter exhaustion of the patient. If at such a time a refreshing sleep could be secured, Nature might recruit her forces sufficiently to repel the attack or abridge its duration. The want of some means to diminish this waste of muscular strength and to afford sleep has long been a desideratum in the orthopnoea of asthma; any appliance to accomplish this must hold the patient not only in an upright posture, but in an attitude most favourable to forced respiration, which is one with the shoulders elevated, the arms raised from the sides, and the head kept from falling. The characteristic attitude of one suffering extremely from asthma will furnish us a model: the shoulders are raised high and kept elevated, in order to avoid the tiresome repetition of the act; the arms are with-

drawn from the sides of the chest to permit the free lateral expansion of the thorax; and the head is thrown back that the air-passage may not be constricted.

The appliance here exhibited is so simple as hardly to need any description. It consists of a cross-bar, from the extremities of which hang two loops of strong elastic webbing for the support of the shoulders. The broad band encircling the head is steadied by guys stretching across on both sides to the upright elastic supports. The apparatus is suspended by a pulley or ring from the ceiling.



Fig. 1.

Figure 1 represents a patient resting with the brace applied under the shoulders. Whenever, from the weight or helplessness of the patient, or from the tedious duration of the case, the circulation in the



Fig. 2.

arms is impeded, the support should be afforded by the elbows, as in figure 2, in which the entire pres-

sure comes upon the outside of the forearm. Usually, however, the degree of pressure under the arms requisite to sustain a person who is sitting is insufficient to interfere with the circulation.

The merits of this appliance do not hang on the theoretical considerations alone; in a modified form, less complete than the present, I have used it in a variety of cases for more than a year. It invariably affords relief, and is incapable of doing harm. It is invaluable in many chronic diseases not attended with dyspnoea, affording a patient who is hardly strong enough to be got out of bed an opportunity to rest in an upright position without exertion, and gives the nurse every facility for rubbing the back or dressing a bed-sore. Its value is manifest in those diseases in which it is desirable to *counteract the ill effects of hypostatic hyperæmia* by friction and change of posture. Its adaptability to the treatment of *spinal disease* is obvious; at the present time, I have a little patient resting in it who is unable to wear the ordinary spinal brace.

It would be an inestimable comfort as an attachment to the field-ambulance or any vehicle used for the conveyance of the sick or wounded. But its most signal value is in the *orthopnoea of asthma*; in this disease, where emphysema and dilatation of the right side of the heart have supervened, the paroxysms are not susceptible of sudden interruption, but run a definite course, the severity and duration of which can be controlled by suitable remedies. But those remedies which most effectually subdue the asthmatic spasm at the same time induce sleep, and to put a patient to sleep who can breathe only in the upright position is obviously a hazardous procedure. Persistent orthopnoea always contraindicates the free use of narcotics, because the somnolent state is unfavourable to respiration. To enable an asthmatic, then, to sleep with perfect comfort in an upright position, not only recruits the sufferer's strength, but *permits the administration of curative remedies otherwise dangerous*.

This apparatus for orthopnoea renders sleep easy, safe, and compatible with the most efficient respiration. It saves and turns against the disease the muscular strength usually wasted. By affording the system the refreshment of sleep the vital current does not ebb, but assimilation and nutrition go on unchecked; the state of the general health being kept unimpaired, the disease is not reinforced by the usual ill effects which it produces in the shape of non-aërated impoverished blood, inanition, and nervous debility. The vital force thus saved always averts a hard struggle, and gives to nature a speedier victory.

In conclusion, I will cite but a single case in illustration. Mr. D., aged 45, physically well endowed, has been an intense sufferer from asthma for more than 20 years. Up to within two years, the attacks have been steadily increasing in frequency and severity. Usually, as the system grows weaker, the inroads of disease become more terrible. The less the resistance, the more heavily falls the blow. An attack of asthma which a weak man would sink under a strong man would endure without exhaustion. Such has been the history of this case. When I first saw Mr. D. he was breathing very laboriously, even in a sitting posture; the face was livid and slightly œdematous, and the feet and ankles were considerably swollen. He had the usual expression and attitude of one in a severe paroxysm of asthma. The intensity of the orthopnoea permitted him to take neither food nor sleep; he had been thus spell-



bound nearly a week, and, during the whole period, had been unable to lie down. Drowsy from exhaustion and a state bordering on asphyxia, he would lurch backward and forward, and from side to side, as limp as a drunken man. One would hardly dare give a narcotic to a patient in such a condition; indeed, it was not needed, for no sooner was the "orthopnoea apparatus" applied than he was sound asleep, and sleeping in an attitude favourable to efficient respiration. In about two hours he awoke, seemed much easier, and took some nourishment, when he again fell into a comfortable sleep, from which he did not awake till we roused him to take food a second time. His recovery from that paroxysm was particularly satisfactory, and yet not so much so as in subsequent attacks, when we have been able to afford the relief earlier, and also to administer suitable antispasmodic and hypnotic remedies which were no longer contraindicated by the orthopnoea. Paroxysms which formerly lasted ten days or even a fortnight have been superseded by very much milder ones of three or four days' duration, during which time the patient has been able to sleep and take food. For the past seven months the attacks have not been attended with much exhaustion, and there has been no oedema as formerly. The paroxysms are not only milder, but are becoming more and more infrequent, and the state of the general health is unexceptionally good.

#### MEDICATED WOOLS.

The Chemical and Medicated Wool Company, of 63, King William Street, has been established to supply the medical profession and the public with cotton-wool carefully prepared and impregnated with various medical substances, having either an antiseptic and stimulant, or other medical effect, according to the object of the application. This application of chemical skill is likely to be extremely useful in practice; and, as increasing attention is given to the subject, we are inclined to think that these kinds of wool, impregnated with suitable chemicals, are likely to come into very extensive use. One sample which has been sent to us is a specimen of salicylic wool; another is impregnated with hydrated chloride of aluminum; and a third is medicated with sulphur. The uses of these preparations are obvious, and surgeons will probably not be slow to apply them in the treatment of external injuries, burns, or wounds. It will probably be found that the list admits of considerable extension, according to the wishes of the individual practitioner. The preparations are dry, cleanly, and portable, and offer many advantages in practice.

#### JUJUBES OF HYDROBROMIC ACID.

At the suggestion of a medical practitioner, Mr. Byatt Walker, of 22, Clapham Road, has prepared a jujube of hydrobromic acid, each section of which contains five drops. This patent will, in all probability, attract some attention among medical men who have given their attention to the recent paper by Dr. Woakes on the subject of hydrobromic acid in medicine; and they will, we think, recognise in these jujubes a most convenient and agreeable form in which to administer that valuable remedial agent.

#### BRANSON'S COFFEE-EXTRACT.

Mr. W. P. Branson, of 155, Fenchurch Street, has turned his chemical accomplishments and technical skill to good account by producing, after a long series of experiments, a coffee-extract which is much superior to any which has yet been brought under our notice. The convenience and advantage of having a thoroughly portable extract of coffee, from which a good cup of coffee can be quickly prepared by the mere addition of a little boiling water, is obviously very great, and many persons have made more or less successful attempts to produce such an article. Mr. Branson has, in the product now before us, been eminently successful. The special qualities of this coffee-extract are, first, that the coffee thus prepared is absolutely pure and free from any admixture of chicory; next, that it contains a maximum amount of the active principle of coffee, or three grains of caffeine to the ounce, thus making it a valuable nervine stimulant; and, further, inasmuch as the albumen of the coffee has not been coagulated in the process of extraction, the coffee contains a larger quantity of nitrogenous product than has been attainable in ordinary extracts of coffee. Mr. Branson may fairly be said to have attained what has hitherto been a great desideratum, the means of making an aromatic and agreeable cup of coffee of good strength with fair economy and great ease.

#### SANITAS.

Under this name an antiseptic and disinfectant fluid has been introduced into commerce, as the result of a series of inquiries by Mr. Kingzett, F.C.S., on the oxidation of turpentine in the presence of water. Mr. Kingzett has ascertained that, by a process, of which the details are explained in an interesting paper which he recently read at the Society of Arts (*Journal*, Feb. 16), he can, by the oxidation of turpentine in the presence of water, produce a fluid wholly in solution of camphoric acid and peroxide of hydrogen, the one a strong antiseptic, and the other both antiseptic and disinfectant. This fluid is a peculiarly interesting one, and likely to render very considerable service for a variety of sanitary purposes. It is probable that it approaches more nearly to the fragrant and volatile powers which have been hinted at as belonging to fir-plantations and plantations of the eucalyptus, than any other product known to science. A solution of peroxide of hydrogen has many obvious advantages for use in hospital wards; in medical practice, and as a domestic as well as a hygienic preparation, it is recommended both for external and internal use.

#### SERUM SANGUINIS EXSICCATUM.

The serum sanguinis has long been known as a valuable flesh-former, but its use has been limited on the one hand by the objection which is naturally entertained to the use of fresh warm blood, and on the other by the difficulty of preserving any preparation of blood-serum. Mr. Vacher of Birkenhead has studied all the methods by which the serum may be dried and preserved unchanged ready for use. Its medical applications are to the treatment of phthisis, struma, diabetes, and other states of atrophy and consumption. It may be conveniently made in a thick mucilage with a little water, and then added to an equal quantity of cod-liver oil, by which means

an exceedingly nutritious, and by no means disagreeable compound is obtained. It is also useful as a vehicle for suspending camphor, oils, resins, copaiba, etc., in watery solution, or, when mixed with water alone, as an emollient demulcent in diseases of the alimentary canal, and of the urinary organs. Locally, it is recommended as a suitable dressing for burns and scalds, or when mixed with a little water and an equal quantity of rectified spirit, as a paint for excoriations of the skin, or to shield the skin in erysipelas or in the pustular stage of small-pox.

#### SELLER'S MISTURA BISMUTHI CHLORIDI.

In the notice of this medicine at page 260 of the LONDON MEDICAL RECORD for June 15, it should have been stated that each dose is equivalent to one drachm of liquor bismuthi, fifteen minims of chloric ether, eight minims of tincture of nuxvomica, two minims of dilute hydrocyanic acid, and one twenty-fourth of a grain of hydrochlorate of morphia. The dose is from fifteen minims to half a drachm.

#### RECENT FRENCH BOOKS.

*Published by Alexandre Coccoz.*

- Coursierant (H.). Etude sur la choroïdite antérieure. Paris, 1877. 2 fr.  
 Latteux (P.). Manuel de technique microscopique, ou Guide pratique et résumé des connaissances indispensables à celui qui commence l'étude au microscope. Paris, 1877. 6 fr.  
 Ravaud (H.). Essai clinique sur le nystagmus. Paris, 1877. 2 fr. 50.

*Published by J. B. Baillière et Fils.*

- Traité du microscope, par Ch. Robin, professeur à la Faculté de médecine de Paris. 2e édition. Paris, 1877. Cartonné. 20 fr.  
 Les Secours d'urgence. Guide pratique des comités et postes d'assistance aux blessés, etc. Conférences faites à la Société des Hospitaliers d'Afrique, par le docteur E. V. Bertherand. Prix 3 fr.  
 La Gymnastique pulmonaire ou l'art de respirer dans tous les actes de la vie physique, par J. F. Bernard, professeur de chant. Quatrième édition. Prix 3 fr.  
 Recherches sur l'albuminurie des femmes enceintes, par C. H. Petit. Paris, 1876. Alexandre Coccoz.  
 Raubaud. Pougues, ses eaux minérales, ses environs. 4e édition, revue et corrigée. 3 fr.  
 Nouveau dictionnaire de médecine et de chirurgie pratiques, publié sous la direction du docteur Jaccond. Tome 23, Mon-New. 10 fr.

*Published by V. A. Delahaye et Cie.*

- Essai sur la pathogénie et le traitement des hémorragies de la paume de la main, par le Dr. Ledouble. 2 fr. 50.  
 Etude sur le cloisonnement transversal du vagin, complet et incomplet, d'origine congénital, par le Dr. Delaunay. 3 fr.  
 Bourceret (P.). De la dysphagie dans la péricardite et en particulier de la péricardite à forme hydrophobique. Paris, 1877. 3 fr.  
 Gillette (P.). Clinique chirurgicale des hôpitaux de Paris. 1 vol. in 8 de 324 pages avec figures. Prix 5 fr.  
 Proust (A.). Traité d'hygiène publique et privée. Paris, 1877. Prix 16 fr.

*Published by O. Doin.*

- Barnay (M.). Etude expérimentale sur l'action physiologique et toxique de la codéine comparée à celle de la narcéine et de la morphine. Paris, 1877. Prix 2 fr. 50.  
 Clerault (G.). La Bourboule, ses eaux minérales, leurs applications thérapeutiques. Paris, 1877. Prix 5 fr.  
 Dupuis (L.). Etude expérimentale sur l'action physiologique de la quinine. Paris, 1877, in 8 de 62 pages avec tableaux. Prix 2 fr. 50.  
 Fenillet (L.). Quelques cas d'hémi-anesthésie de cause mésentérique. Paris, 1877. Prix 1 fr.  
 Grellety. Vichy et ses eaux minérales. Paris, 1877, 1 vol. in 12 de 360 pages. Prix 3 fr. 50.  
 Pinard (D.). De la gingivite des femmes enceintes et de son traitement. Paris, 1877. Prix 1 fr. 50.  
 Trapenard (G.). Etude d'hygiène des écoles (*Eclairage du jour et mobilier*). Paris, 1877. Prix 1 fr.  
 Wecker de (L.). Echelle métrique pour mesurer l'acuité visuelle. Paris, 1877, 1 vol. in 8 avec atlas séparé, le tout cartonné. Prix 7 fr. 50.

#### PARIS GRADUATION THESES.

(*June 15 to 23, 1877.*)

- Hutinel (Victor). Contribution à l'étude des troubles de la circulation veineuse chez l'enfant et en particulier chez le nouveau-né.  
 Patrigcon (Gabriel). Recherches sur le nombre et les variations des éléments figurés du sang dans quelques maladies chroniques.

- Concaix (Léon). De l'hémiplégie syphilitique.  
 Gersperrin (Joseph). De l'éphidrose parotidienne.  
 Lelièvre (B.). Des exostoses épiphysaires de l'extrémité inférieure du fémur.  
 Crimail (Antonin). Des luxations traumatiques du fémur.  
 Moinel (Paul). Essai sur les lupus scrofuleux des fosses nasales.  
 Hichaud (Alfred). Etude sur le pityriasis pilaris.  
 Cotelte (Théodore). De l'hématocèle péri-utérine.  
 Goudard (Henri). Etude sur les fluxions rhumatismales abarticulaires.

#### MISCELLANY.

W. BATHURST WOODMAN, M.D., F.R.C.P.—We deeply regret to have to record the untimely death of one of our most accomplished and valued contributors, Dr. Bathurst Woodman, some of the last literary products of whose pen appear in this number. Dr. Bathurst Woodman was a young physician of great and varied accomplishments, unwearied industry, and most pure and lofty aims. Unhappily, his success in life did not correspond so quickly as might have been hoped with his great claims. Severe afflictions wrought upon a sensitive nature; and the effect of this, added to the stress of continuous mental labour, destroyed the balance of his mind. In his death all will regret a young physician who seemed destined to render great service in medicine, and to achieve in it a position of great prominence. Dr. Woodman was physician to the London Hospital and to the North-Eastern Children's Hospital, and a member of the Court of Examiners of the Society of Apothecaries. He was recently elected a Fellow of the Royal College of Physicians. He was the translator and editor for the New Sydenham Society of Wunderlich's *Medical Thermometry*, and the author, conjointly with Dr. Tidy, of a *Handy Book of Forensic Medicine*.

THE BRITISH ASSOCIATION.—At the meeting of the British Association in August next, Mr. J. Gwyn Jeffreys, LL.D., F.R.S., will act as President of Section D, and will himself take the chair in the department of zoology and botany, those of anatomy and physiology and of anthropology being presided over by Dr. M. Foster, F.R.S., and Sir Walter Elliot, K.S.I., respectively. One of the lectures to working men will be delivered by Capt. H. W. Feilden, naturalist to H.M.S. *Alert* during the late Arctic Expedition.

MDLE. ZENAÏDE OCUMKOFF has just successfully presented her thesis for admission to the doctor's degree to the Paris Faculty of Medicine. The subject of her thesis was, "On the rôle of Ether in Subcutaneous Injections, and of the use which may be made of it as a supplement to transfusion of the blood."

MEDICAL DEGREES FOR WOMEN.—The following memorial has been addressed to the Chancellor and Senate of the University of London.—We, the undersigned women, who are engaged in the practice and study of medicine, have heard, with the greatest satisfaction, of the resolution of the senate to admit women to the medical examination and the degrees of the London University. The fact that a complete medical school for women, with the necessary hospital practice, has recently been established in London, leads us to think that the present is a fitting time for extending to women the incentive to wide and patient study, which is afforded by the high standard of the London degree. We believe that this incentive will prove to be, in all its bearings, as valuable to women as it has been to men. We beg, therefore, to tender our sincere thanks to the senate for the action they have already taken, and to express our earnest hope that the necessary arrangements will be completed as soon as possible. Elizabeth Blackwell, M.D. (Geneva, U.S.); Elizabeth Garrett Anderson, M.D. (Paris), L.S.A. Lon., 4, Upper Berkeley Street; Louisa Atkins,



M.D. (Zurich), L.K.Q.C.P.I. (Dublin), 68, Abbey Road ; Eliza Walker Dunbar, M.D. (Zurich), L.K.Q.C.P.I. (Dublin), Bristol ; Annie Reay Barker, M.D. (Paris), Birmingham ; Mary Edith Pechey, M.D., Berne, L.K.Q.C.P.I. ; Sophia L. Jex-Blake, M.D., L.K.Q.C.P.I. (Dublin) ; Isabel Thorne, Sevenoaks ; Edith Shove, 30, Henrietta Street, W.C. ; Jean E. McCaff, 30, Henrietta Street, W.C. ; Janet Monteath Douglas, 30, Henrietta Street, W.C. ; Jane E. Hammond, 30, Henrietta Street, W.C. ; Isabella Bartholomew, 30, Henrietta Street, W.C. ; Annie de la Cherois, 30, Henrietta Street, W.C. ; Isa M. Fogg, 30, Henrietta Street, W.C. ; Constance V. F. Hitchcock, 22, Norfolk Crescent, Hyde Park ; F. Helen Prideaux, 22, Woburn Square ; Elizabeth Ireland Walker, 121, Rue de Morney, Paris ; Helen Johnston Bouchier, 85, Rue Ponge, Paris ; M. G. C. Hoskins, 13, Rue des Halles, Paris ; E. A. Mouncey, 19, Rue de la Glacière, Paris ; Mary A. Marshall, 77, Rue Notre Dame des Champs, Paris ; Mary Waite, 48, Rue de Madame, Paris ; Alice M. Hart, 59, Queen Anne Street, W. ; Ella Lawson, 6, Rue de la Sorbonne, Paris ; Rose A. Shedlock, 4, Rue des Ecoles, Paris ; Anna Damhs, M.D. (Paris), Faculté de Médecine, Paris ; Fanny Jane Butler, 26, Brompton Square, S.W. ; Adela Bosanquet, 30, Henrietta Street, W.C. ; Jane E. Waterston, 30, Henrietta Street, W.C. ; Charlotte Ellaby, Ecole de Médecine, Paris.

THE NAPLES ZOOLOGICAL STATION.—Dr. Dohrn's Zoological Station at Naples continues to make satisfactory progress. The number of naturalists who have availed themselves of the institution has reached eighty, from almost all parts of Europe. The summer dredging with the small steamer is carried on under the direction of Dr. Dohrn, the working management being in the hands of Dr. H. Eisig and two assistants. The aquarium belonging to the station has for some time been the most successful in Europe.

INSANITY IN THE CITY AND COUNTY OF HEREFORD.—From the Fifth Annual Report of the Asylum for the City and County of Hereford, we find that during the year 1876, the admissions numbered 110, being 36 per cent. in excess of the number admitted in 1873. Dr. Chapman attributes this rapid increase in the numbers admitted, not to an increase of lunacy in the population, but to the fact that the Government subsidy has removed any limitation on the part of boards of guardians, in sending their insane paupers to the Asylum. The rate of recovery was 39 per cent. upon the average number resident ; and of the cases admitted during the year, 50 per cent. recovered during that period ; a proof that freedom of admission promotes early treatment in an asylum, and that such early treatment increases the number of recoveries and shortens the duration of treatment. Amongst the causes of insanity, intemperance still holds a high place, twelve cases admitted being attributed to this cause ; it is, however, remarked, that as these cases are very curable, the same persons are apt to appear again and again, so that the proportion of individual cases is not so great as the table of causes would lead one to believe. Remarking upon the use and abuse of alcohol, Dr. Chapman registers his opinion that alcohol is absolutely unnecessary as an ordinary article of diet ; that as a medicine it no doubt has great powers ; but that the cases in which those powers are exerted for good are fewer than is generally supposed by the public, if not by medical men, and are chiefly to be found amongst acute diseases. Attention is also drawn to the fact that little of this medicine is used in the asylum. Might not the case of death from acute mania have had a different result if a little more of this medicine had been used ? A large number of out-county patients are received here ; and attention is drawn to the fact that a profit of £686 per annum is derived from this source. This money is rightly carried to the additions and repairs account, and thus relieves the county rate. As this sum simply represents the out-county patients' share of the rent and repairs, it is a question how far it is correct to apply the term profit to it.

ROYAL COLLEGE OF PHYSICIANS.—On June 27 the President and Fellows of the Royal College of Physicians assembled to hear the Harveian oration, which was delivered by Dr. Sieveking at the college, the president (Dr. Risdon Bennett) in the chair. Dr. Sieveking vindicated the claims of Harvey to be considered the discoverer of the circulation of the blood, discussing adversely the distinction assigned by some to Cesalpino, to whom recently a monument was erected in Rome ; and who, though he approached the theory, never regarded the heart as the central moving power of the circulation. In the course of the lecture it was suggested that the notes of Harvey's lectures, which had recently been discovered in the British Museum should be published, and it was incidentally mentioned that some of these notes showed that he used vivisection in the course of his investigations. The present period of British medicine was one to which, in the lecturer's opinion, the name of the Harveian era might be awarded, in view of the result of its researches, and the spirit in which they were made. In the course of a review of the present position of medical science in its various departments, he pointed especially to the advances made in sanitary science under the direction of Mr. Simon, whose office under the Privy Council it was now unwisely proposed to abolish. The president announced that the council of the college had recommended Professor Carl Ludwig, of Leipsic for the medal to be awarded to the physiologist who, in their opinion, had done most during the past two years for the advancement of the science. The medal was handed to the registrar, to be forwarded to Professor Ludwig.

THE LINNÆAN SOCIETY.—The following have been elected foreign members of this society :—Pierre du Charte of Paris, highly distinguished for his researches in teratological, physiological, and other branches of botany ; Professor Carl Gegenbauer of Heidelberg, whose labours in zoology and the comparative anatomy of the vertebrates and invertebrates are acknowledged as of the highest standard ; and Professor Rudolph Leuckardt of Leipzig, to whose philosophical investigations into the morphology and physiology of the lower forms of animals, and establishment of the group coelenterata, zoologists of all countries are highly indebted.

ON THE AMBIGUOUS POSITION OF THE MONADS.—Labouring on the oft-contested grounds of the lowest animal and vegetable organisms, Cienkowski (*Monthly Microscopical Journal*) has almost succeeded in persuading us that the old barriers between the two kingdoms must be torn down, and Haeckel's *Protista* recognised as the common starting-point for the origin and differentiation of animal and plant-like forms. He traces in the development of certain monads the formation of protoplasmic networks (plasmodia), similar to those of the plant *Inxomyces*, and which eventually breaks off into amoeba-like forms. He regards such forms, therefore, as not independent organisms, but as a link only in the developmental cycle of the lowest plant-like forms. He observed the stages of encystment, self-division, and the formation of colonies amongst monads.

STRUCTURE OF THE OPTIC BATON IN CRUSTACEA.—A paper on this subject by M. J. Chatin has lately been read before the French Academy of Sciences. The author refers to the whole anterior portion of the crustacean eye, from the cornea to the optic nerve as divisible into two portions—the outer hyaline portion or *cone*, and an internal elongated part, the *bâton* proper. He shows that the dark tint of this latter portion is due to an investing matrix of pigment, and disputes the existence of a muscular tissue, which has been asserted by the German school. The transverse striæ seen on the surface of the bâton are really indicative of its division into discoidal lamellæ. In conclusion, he classifies crustaceans from the development of the visual apparatus as follows : Astacus, Homarus, Squilla, Eupagurus, Pagurus, Paguristes, etc., as possessing the highest form ; Typton, Lysianassa, and Iscea, a more simple form ; Notopheroporus and Caprella are still lower in the scale ; whilst Epimeria and Lichomolgus are ranged last in the list.

# The London Medical Record.

## SÉE ON SALICYLIC ACID AND THE SALICYLATES.

IN the number for June 1877, of the *Bulletin de l'Académie de Médecine*, appears an article by M. Sée, on the Treatment of Acute and Chronic Rheumatism, of Gout, and of Various Affections of the Nervous System, by the Salicylates. It is a scientific and exhaustive treatise on the subject. The author gives a concise sketch of the history, chemistry, physiological and therapeutical effects of salicylic acid and its compounds, and he details his own experience and observations on the drug.

Regarding its preparations, he points out that hitherto salicylic acid has been the form most frequently employed, but that there are serious drawbacks to its use. It is sparingly soluble in almost every medium, and, therefore, must be used as a powder. It has an acrid taste, is irritating, adheres to the mucous membrane, causing sometimes erosion of the pharynx, œsophagus, and stomach. The salicylate of soda is much the better form of administering the acid. It has no taste, and is soluble in water. It contains four-fifths of acid and one-fifth of soda. The dose of the acid should be about one and a half drachms, and of the salt, two and a half drachms in twenty-four hours; the latter should be largely diluted. The salicylate of lithia, the salicylate of quinine, and salicine, have also been employed; but, in the author's opinion, they are in no way superior to the salicylate of soda.

There is evidence given to show that salicylic acid is a powerful antiseptic.

Physiological experiments on animals indicate that, after long-continued small doses of 15 to 30 grains, no effects are induced. In poisonous doses, dyspnoea, diminished frequency of the respirations, convulsions, and death ensue. There is no modification of the arterial tension, or of the number of cardiac pulsations; nor is there any change in the temperature in healthy animals. Although there are convulsions immediately preceding death, the general sensibility is unaffected. Very little has so far been inferred from the effects of salicylic acid on the lower animals as to its action on man.

Physiological experiments on man show that, before any effects are produced, the dose of the acid must exceed 30 to 45 grains per day. If taken in frequently repeated drachm doses, it induces nausea and vomiting, with a burning sensation in the stomach; to avoid this, it should be largely diluted in water. It also, sometimes, causes noises in the ears and peculiar sensations in the head, occasionally deafness. When the drug is discontinued, these symptoms cease, leaving no permanent trace. In therapeutical doses, it has no apparent action on the nervous system. In large doses, delirium and tetanic spasm have been observed; but in the author's hands, no such effects have followed the administration of even three drachms of the drug. In healthy individuals, therapeutical doses

have no effect on the heart, pulse, respiration, or temperature. The acid is very rapidly eliminated by the urine. Ten minutes after it is swallowed, traces of it can be found in this fluid, and its total elimination often takes place in as soon as 24 hours; hence the importance of small and frequently repeated doses. It is said sometimes to act as a diuretic. It is dangerous to give this drug when disease of the kidney exists. The acid is also found in the blood and sweat.

Salicylic acid has been employed in a variety of diseases. As a disinfectant and antiseptic, it does not appear to be specially useful, either externally or internally, in septicæmic diseases. In ordinary fevers, some authors think it diminishes the frequency of the pulse, the temperature, and the febrile attack; this is denied by equally trustworthy observers.

It is in acute articular rheumatism that salicylic acid is of marked and peculiar benefit; by many it is looked upon as a true specific for that disease. As the drug is rapidly eliminated, its use should be continued for 10 or 12 days after recovery. The author treated 19 cases of acute rheumatism, nearly all complicated with cardiac affection, and all recovered in three days, with one exception. His general observations on the treatment of acute articular rheumatism by salicylic acid are as follows.

1. The pains invariably cease in from 12 to 18 hours.
2. The articular inflammation ceases at the end of three days; the swelling diminishes even when there is effusion into the joint.
3. The movements of the joints become free after the third day.
4. The fever leaves with the pains. If it continue, it is an indication that other joints are about to become affected.
5. In cases of subacute rheumatism which have lasted many weeks, the pains and swelling have been reduced in three days.
6. Relapses may be treated in a similar manner, and are followed by like results.
7. Salicylic acid has a most favourable action on the complications of rheumatism. By shortening the course of the disease, it tends to prevent anæmia and debility. Although it does not in any way affect old standing cardiac affections, in the author's experience, cases treated with salicylic acid have not, while under treatment, developed any cardiac disease, and he says that it is logical to suppose that, in cutting short the articular affections, the drug should do the same for the membranes of the heart.
8. The course of the disease is greatly abridged. Out of 52 cases, 51 recovered in from two to three days.

The other forms of acute rheumatism are equally benefited by salicylic acid. The symptoms, also, of chronic rheumatism, with its various complications, are greatly relieved by a similar treatment, especially the acute attacks often met with; and the pain and swelling accompanying rheumatic arthritis, with contractions and deformity, are modified and relieved.

M. Sée has also applied the treatment of salicylic acid to gout, both acute and chronic, with the result of causing diminution of the pains and articular swellings. Acute gout, he says, ceases under its influence in 48 hours. In chronic gout, which may have lasted for years, the joints have become more flexible, and all the symptoms have been relieved.



The principal indication in this disease is the elimination of uric acid from the blood, which the salicylates promote.

In painful affections caused by gravel, such as nephritic colic, this medicine appears to terminate the crisis and favours the expulsion of the foreign body. It is also a valuable remedy in various affections of the bladder. In neuralgia, salicylic acid acts as a sedative, and has been found beneficial in sciatica, tic douloureux, and headache. It has also been found serviceable in diseases of the spinal cord, in myelitis, locomotor ataxy, sclerosis, hyperæsthesia, cramps, and other painful affections, over which the acid has a calmative and sedative effect.

The therapeutical effects of salicylic acid may be summed up thus.

1. As an external antiseptic it has no advantage over others except its freedom from smell. As an internal disinfectant, it has no apparent effect.

2. As an antipyretic, its properties are doubtful.

3. In acute articular rheumatism its effects are sure and rapid, and a cure of this disease may be confidently prognosed in from two to four days.

4. It greatly relieves chronic rheumatism, diminishes the pain and swelling of the joints, and favours the movements of the limbs even after years of suffering.

5. In acute and chronic gout its action is the most remarkable, causing the former to disappear in two or three days; moderating, and even curing all the symptoms of the latter.

6. It is employed with benefit in neuralgiæ of all kinds.

7. It acts as a sedative in painful affections of the spinal cord.

A. HUGHES BENNETT, M.D.

## REMARKS ON THE DIAGNOSIS, COURSE, AND TREATMENT OF CANCER OF THE STOMACH.

BY PROFESSOR RÜHLE, of Bonn.\*

EVERY experienced physician knows that cancer of the stomach is generally not recognised at all in its commencement, later on, only with uncertainty or more or less probability. The disturbances of gastric function are not prominent, or at least, not characteristic. The feelings of weight, uneasiness, and gnawing are present in other diseases, and vomiting cannot decide the question. Goodsir's sarcinæ are present wherever the contents of the organ are long retained, and even "coffee-grounds" vomiting is not peculiar to cancer. But, taken together with other phenomena, these are of importance, especially the last, and, combined with increasing cachexia, it narrows the range of possibilities, and makes carcinoma very probable. But vomiting of blood, especially copious hæmatemesis, is rare. Ebstein reports a case of Dusch's, in which the stomach and intestine were found after death full of blood, which had come from a carcinoma of the stomach. It cannot be doubted, moreover, that many patients allege that they recollect vomiting blood. Whoever maintained that this symptom does not belong to cancer, would have to regard the disease in such cases as something else; and if a tumour were present, would consider it as the result of perforating ulcer. The chronic recurrent ulcer of the stomach may give rise to very marked

thickening of the wall near the pylorus. Besides, the difficulty is increased, when we recollect that ulcer and cancer do not exclude each other; and, too, that cancer may develop in the wall of a cicatrised ulcer. Occasionally one finds, in the centre of a cancerous growth, a distinct, deep, rather firm fibroid round spot, which can be regarded only as a scar of an earlier ulcer.

I saw a case of this kind for the first time when I was assistant in Frerichs's wards. Shortly before a celebrated Russian statesman had died at Warsaw, Schönlein had diagnosed cancer, and had given a bad prognosis; Oppolzer had diagnosed ulcer, with a good prognosis. Dissection showed cancer. We believe our observation explained Oppolzer's mistake, as he had been led to diagnose ulcer from the occurrence of early hæmatemesis. But I have seen cases here of patients who undoubtedly suffered from and died of cancer, but who had had hæmatemesis very early so many years before, that it would be contrary to all our experience to think that they then had cancer. Still the gastric troubles had remained ever since, and the patients dated their ill-health from the vomiting of blood. I have never seen cancer produce such copious hæmatemesis as occurs from the rupture or erosion of a large vessel in the epigastrium or its neighbourhood; and, apart from ulcer, I know only cirrhosis of the liver, or perhaps rupture of a dilated vein in an over-distended stomach, as rarer causes of hæmatemesis. I once saw a man in All Saints' Hospital who vomited large quantities of blood, yet he could not recall, nor could we discover, anything to throw light upon it. In this case there was a soft shaggy growth in the stomach, which on section, corresponded to Cruveilhier's description, and probably was villous cancer. Hæmatemesis also occurs independently in purpura or scurvy, and blood from the nose may be swallowed and lead to mistakes. The presence or absence of enlarged lymphatic glands or swelling in the clavicular region is of little significance, as they are often absent in cancer, and present from other causes. The forty years traditionally supposed to be the necessary age, does not help in doubtful cases, as cancer has been shown to occur at twenty. On all these grounds the repeated appearance of "coffee-grounds" vomit in an individual who shows signs of increasing cachexia and gastric derangement is of much significance. Yet when to these always doubtful signs we add the presence of a tumour in the epigastrium error is quite possible, even excusable, or perhaps not to be avoided. Putting aside the difficulties of ascertaining that a tumour in the epigastrium is really connected with the stomach, let us assume that a tumour thus defined has the peculiarities of that hard and nodular condition which we claim for cancer itself, yet the tumour may be only a thickening of the wall of the stomach, resulting from a chronic ulcer, and consisting of inflammatory fibroid growth. Further on I will relate just such a case. On the other hand, a smooth painless tumour of the stomach-wall may be a cancer. About fifteen years ago, at Greifswald, Professor Grohe examined the body of a man who possessed such a tumour, but who had had frequent coffee-grounds vomiting, and who died in rapidly advancing cachexia. At first, no cancer was found. The mucous membrane of the pylorus had disappeared in extensive patches, and instead of it there was a smooth shiny connective tissue growth, and the thickening of the wall of the stomach, in which the muscular wall took part, seemed a so-called simple induration; but between the bands of connective

\* *Deutsche Medicinische Wochenschrift*, April 7th.

tissue there were some dirty greyish brown patches, like very adherent scabs. These attracted the professor's notice, and microscopical examination showed them to be villous cancer. This case is valuable because it illustrates the diagnostic value of "coffee-grounds" vomiting, and also shows the possibility of cancer becoming eroded and partially healing, for I do not suppose any one will deny that the fibroid patches were formerly the seat of a villous growth. Why then, should not cases considered as cancer get better, or even recover, although they really are cancer? Thus we have seen that a non-characteristic tumour may be cancer, while, on the other hand, a hard nodulated painful tumour may not be cancerous at all. I will give an example of this.

J. L., sailor, aged 44, was admitted on February 2, 1877. The great strongly built man was shockingly pale, and so exhausted that he could scarcely walk; his legs and feet were oedematous. He complained of pain and weight in the epigastrium, aggravated at night, and of eight weeks' duration. For the last week he had been vomiting, which was of no special character. Since the appearance of these symptoms, the rapid decrease of strength and the striking pallor had developed. He had no appetite; his bowels were constipated. Inspection of the epigastrium showed visible pulsation, and in this region a large tumour could be felt, which measured six and a half centimetres (two and a half inches) from right to left, and about four centimetres (one and two-third inches) vertically. The surface was uneven, the resistance considerable; pressure was very painful; over the tumour there was a low tympanitic note; the liver evidently limited the tumour; there was no swelling of lymphatic glands. From the appearance of the patient, an increasingly rapid course of the disease was evident, and the tumour of the stomach was spoken of as carcinoma. Shortly before this, Friedreich's well known case of the action of *condurango* had been published, and this patient received a tablespoonful of the decoction three times a day. This mixture was always procured from the same apothecary, and was used by the patient up to the middle of August. By May 21 he found himself stronger, the anæmia was less, and his appetite was certainly improved. The vomiting had ceased, and his bowels had become regular. The state of the gastric tumour was the same, only it was less tender. By July his appearance was fast becoming normal, his appetite was excellent, his strength improved, so that he was able to bring a heavy boat half a mile up the Rhine. As he felt himself so completely well in August, he discontinued the use of the medicine. The tumour on July 24 was the same as at the beginning. In the winter his condition changed again for the worse, vomiting occurred frequently, but still without blood. The renewed use of *condurango* brought only transient relief. His appetite disappeared, and with it his strength, and his general condition became very similar to what it was when he was first seen. As I am informed, the tumour underwent no change. The patient lived at a distance, and did not come to the hospital in the winter. Thirty-six hours before death an urgent call to stool was followed by hæmatemesis. This recurred after twenty-four hours, and death very quickly followed. The dissection showed as follows.

The stomach was considerably dilated; the pyloric end and the smaller curvature were united to the anterior half of the left lobe of the liver. From the liver border downwards, on the anterior surface of the pyloric portion, the serous coat of the stomach was

greatly thickened; its surface was uneven and nodular, and this thickening stretched from right to left, to the extent of 3 to 3½ inches; downwards it formed a well marked convex line, the lower half of which was greater than a segment of the greater curvature. To the right the thickening reached to the pylorus; behind it passed as far on the posterior wall as on the anterior. It was there united to the pancreas. The growth involved all the coats, and on the anterior wall was more than 0.4 inch in thickness. The stomach was slit up along the greater curvature. The anterior wall and the attached lobe of the liver being thrown outwards, an extensive loss of substance on the inner surface of the stomach was exposed, which reached saddlewise from the great curvature, along the whole anterior wall, over the smaller curvature and posterior wall to the extent of twelve centimetres (four and three-quarter inches), and measured six centimetres in breadth, being somewhat less on both sides. The floor of this space was smooth, and hard as tendon. The pancreas was exposed on the posterior wall. In it gaped the opening of the ruptured pancreatic artery. The borders were everywhere raised, but at the posterior part the right border of the space was sharply cut, and showed all the coats of the stomach—fibrous, muscular, and serous in their remarkably thickened condition. Cancer-elements were not found in this tumour. There was no swelling or infiltration of the lymphatic glands. All the other organs were intact, and especially were free from new formations.

During life the unchanged condition of the tumour had shaken the diagnosis of carcinoma. The history did not permit us to accept the diagnosis of ulcer. That must have existed long previously. The tumour then could only be the result of an old long-standing chronic inflammatory process, and blood had never been vomited. Finally, death followed the erosion of an artery and hæmorrhage into the cavity of the stomach. Dissection showed a large, almost healed loss of substance, with fibroid induration of the wall of the stomach over a considerable extent, and of remarkable thickness. The morbid process cannot be considered carcinomatous in the absence of cancerous elements and secondary carcinomatous affection. The nodular tumour of the stomach, felt during life, was not cancer.

Whilst the history misled us, the observation of the unchangeability of the tumour corrected the mistake, and the fatal hæmatemesis which occurred confirmed the view that it was not cancer; and thus the verdict before death was in harmony with the verdict after dissection. That a tumour of the stomach may be regarded as a cancer, it is necessary to add, as this observation has shown, that its dimensions demonstrably increase. This addition has recently shown its value.

A tumour may be so placed and conditioned that it appears not to be connected with the stomach, and so long as no stomach troubles are present, a diagnosis of the tumour as cancer, still less of cancer of the stomach, is hardly possible.

A large strongly built man, aged 43, presented himself. He showed no cachexia; his countenance was still ruddy. He complained of pressure in the left hypochondrium, and of frequent desire to pass urine. At the level of the left costal margin a smooth oval transversely lying tumour could be felt, eight centimetres long and five centimetres broad, which could be moved from right to left, and appeared little painful. Appetite was undisturbed; there was no nausea nor vomiting. From this account it seemed probable that the tumour was a dislocated organ—



spleen or kidney. The next week the tumour was changed; it was more extensive. Later it became distinctly larger, rounder, and now began loss of appetite, vomiting, and debility. In the later stages coffee-grounds vomiting appeared, and the patient fell into a marasmic state. Dissection showed an ulcerating medullary carcinoma of the greater curvature of the stomach, midway between the pylorus and the fundus: from the growth of the tumour, the cachexia, and finally the coffee-grounds vomiting, there was sufficient evidence of carcinoma; but at first the diagnosis of the tumour was hardly to be made.

In concluding these remarks on diagnosis, I may say that there are very rapidly growing cancers of the stomach which, from their soft consistence, are not to be felt in fat people, or when they are so placed that they are not accessible to the touch.

The course of cancer of the stomach is at present regarded as invariably fatal. So long as this is considered an axiom, every case called cancer, which improves or appears completely cured, must, on that account, be struck out of the list. But is it quite true? I have related a case in which was found a cicatricial process in the mucous membrane, near the remains of a villous cancer, together with an uniform hypertrophy of the wall of the stomach. Moreover, I know an old gentleman who for years presented a tumour at the border of the liver, which was not the gall-bladder, and which gradually atrophied. His father died of cancer. Two years after this tumour was observed, he developed the signs of a dilatation of the stomach, with loss of strength; the hard, very uneven pylorus could be distinctly felt; one could nearly always see the contractions of the stomach run up to this cylindrical mass. There was pyloric constriction; and a palpable nodular lump at the pylorus. There had never been anything observed pointing to ulcer, and the dilatation developed itself with relative rapidity, in an old man of 69. Was it not reasonable for me to give an unfavourable prognosis? But the tumour has gone, the dilatation of the stomach has disappeared (merely by regulated diet), and all symptoms of disease have ceased. And now, three years after the above account, the gentleman is still in active employment, and walks every day to drink his coffee half an hour's distance there and back. What was this lump? It disappeared entirely without medication; domestic remedies even were not used. It was not cancer, because it disappeared. We ask, but what else was it? On that we are silent. Do you regard the tumour in Friedreich's case as not cancer because it disappeared? I have it from Friedreich's own lips that he does not in the least give up the fact. Perhaps I may mention that that case died of cancer a year later; and I ask, does this speak for or against the cancerous nature of the tumour felt by Friedreich himself, and which afterwards disappeared? I believe it speaks for it.

In the course of cancer of the stomach, rupture may occur. I saw a case of rupture into the peritoneal cavity, with so rapid a fatal ending that peritonitis did not come on. The patient, who had been long affected, and whose cancer was easily recognisable, complained suddenly of a severe stomach-ache and collapse, after twelve hours of pulseless exhaustion. The contents of the stomach, grey, slimy, with remains of food in it, ran into the abdominal cavity. The stomach showed a very extensive carcinoma, which reached from the posterior wall to the pancreas, and near it was found a long

sharp rent in the border of the tumour, the stomach itself being empty. At Greifswald I saw another case of a tumour near the abdominal wall, which gradually ulcerated through, and discharged the contents of the stomach for eight days during life: one could pass a probe a long way into the cavity; there was a cancerous gastric fistula.

As it is by exhaustion, apart from such exceptional cases, and its excessive extension to other organs, that cancer generally causes death, there must be something in the formation of cancer itself, which acts deleteriously on sanguification and nutrition, if the functional interference with the organs affected do not explain this regular extreme anæmia and cachexia. It is quite likely that in some cases it is to accidental and secondary circumstances that the great loss of strength is due; and I think that at least the different degrees of dilatation of the stomach, which result from pyloric cancer, hasten the falling off of nutrition. How marked such a hastening may be, I saw three years ago in the case of a woman under the care of a colleague. I found the patient very debilitated, extremely emaciated, with a pyloric cancer, which one could, so to speak, grasp in the hand in its whole extent. The tumour was as large as a medium-sized apple. So great dilatation of the stomach was the consequence that the greater curvature reached to the symphysis pubis, and the stomach was quite full of fluid, the urine being very scanty. The general impression which the state of the patient left on me was, that she could not live longer than a week; the extremities were cold, the radial pulse scarcely perceptible, and the patient hardly able, with great effort, to answer questions. I was of opinion that the carcinoma, as such, had not produced this great exhaustion, and begged my colleague to try the effect of the stomach-pump. This was done, and fourteen days later I learnt the following particulars. After the fourth application of the stomach-pump, the patient felt such an urgent thirst that, in spite of all warnings, she drank in greedy draughts about one and a half litres of water; soon after she began to perspire, felt more comfortable; her pulse rose, and from that day was dated an improvement in her general condition, with increase of appetite, which pardonably cast doubt on the genuineness of the carcinoma. Then the patient left her bed; she even took walks, and I saw her after five weeks in a strikingly improved condition. But the lump had not disappeared; it was even a little larger, and after five months the patient succumbed to her disease. In this case certainly the high degree of exhaustion was not directly due to the carcinoma. But how shall we explain the sudden change for the better? I propose the following explanation: by the use of the stomach-pump a general hyperæmia of the mucous lining was induced (in what manner remains in the meantime undecided); this produced thirst, the imbibed water was rapidly taken up by the distended vessels, and thus a fluid was introduced into the circulation, which, similarly to water-injections in cholera, stimulated the heart's action; through the energetic contraction of the heart the blood-stream was enlivened and hastened, the basis of a better nutrition of the tissues was created, which now, by farther introduction of nutriment, went a stage further, and her strength increased. Although not so rapidly, one sees improvement in the strength of patients who suffer from gastric cancer, occurring in different ways; and with it the course of the disease appears to undergo a favourable change.

The conduct of the patient and the treat-

ment employed have often their share in this result. On this head I might tell you what I think of the use of condurango. I do not doubt that there are active and inactive barks, genuine and spurious drugs; and you must at least ascertain that you use good condurango bark. No one seems yet to have made extracts or tinctures, and Friedreich's macerated decoction (15 to 360, macerate for 12 hours, then evaporate to 180) is employed in tablespoonful doses three or four times a day, and I have always used this formula. Prepared in this way, we get a dark brown, somewhat turbid fluid, which has very little characteristic taste, and is rather insipid; it might be called slightly bitter and aromatic. I have frequently seen the dispenser furnish a bright brown clear medicine, which has still less taste, and which appears to have no active properties when used. I have not seen such a result as in Friedreich's case. The case related above, in which a striking improvement in appearance and strength followed the six months' use of condurango, cannot be considered as cancer. Still the influence of the treatment is not the less striking. Although a large pyloric tumour existed, and the enormous loss of strength and appetite must have been due to a disease of the stomach, the appetite returned to a considerable extent, the vomiting ceased, and his appearance, nutrition, and strength returned to their normal condition to an extraordinary degree; and this improvement lasted from March till November. In similar fashion, though in much less degree, many patients improved who were treated with condurango in the summer of 1874. There were seven men, three with cancer of the stomach, two of the liver, one of the rectum, and one of the œsophagus. Of these four ceased to come, because they felt better; and the three others—one with cancer of the stomach, one of the liver, and one of the œsophagus, died under our care. Of the first four, who were altogether out-patients, we have been able to get no further tidings. The statement of feeling better expressed itself objectively by a gain of a kilogramme in weight and increased appetite; but none of them used condurango longer than seven weeks. Of the three who died, one was the case of cancer of the stomach, the sudden rupture of which I have related. The man had taken the medicine for five weeks only; he considered himself better, and vomited little; but his tumour had changed very little, so far as could be made out at his discharge. The one suffering from cancer of the liver got peritonitis, the cause of which seemed to be injury of the cancer by a round worm. The cancer pressed in one place upon the upper part of the duodenum, and was soldered to its wall. Here there was a little opening, in the neighbourhood of which there was a purulent inflammation, and slimy softening of the liver cancer; in the middle a large round worm was found. The third case showed a medullary carcinoma at the cardiac end of the œsophagus. The cancer had extended to the diaphragm, and had caused extensive disease in the abdominal cavity without any effusion of fluid. In both these two cases the patients felt stronger, and had better appetites after the first week's use of the medicine. It was very important to find out by microscopical examination whether there were any grounds for believing that a retrograde metamorphosis of the cancer, something like a recovery, had commenced. But my colleague, Herr Köster, who had the goodness to make the examination, tells me that he found no trace of anything of the kind. It is true the treatment lasted only a short time, but in the last case

the extension of the cancerous infiltration was not at all prevented. If I may add that I have been told repeatedly by out-patients who have used condurango for cancer of the stomach, that the chief symptoms—vomiting, loss of appetite, and the pain itself have abated; that in one case a decided improvement of general health took place, still these are perhaps experiences of the same kind as Riegel gathered from an in-patient of his, and which made him describe the drug as a stomachic in an universal sense. In other cases, Riegel saw no result. Perhaps this may depend on the difference between hospital and domestic care, as the effect of a stomachic depends much upon the nature, choice, and individual considerations of diet. Besides, in private practice the bad quality of the drug itself may often prevent its employment being followed by a favourable result. My colleague, Herr Friedreich, had the goodness to communicate to me the discussion in the Society of Physicians of Würtemberg, which appeared in the *Correspondenz-Blatt* of the 12th of June, 22nd of July, and 14th of September, 1876, of which I will only relate that the physicians found a general improvement result not only in cancer of the stomach, but in chronic catarrh, anæmia, chlorosis, obstinate vomiting, and in cases of convalescence. One maintains that swollen lymphatic glands, which had resisted iodine, soon disappeared under the use of condurango, even those which lay within reach of a cancerous tumour. Nine physicians spoke in favour of the decided therapeutic action of the decoction, but the speeches on the other side are not reported. I will not say anything further about the careful regulation of diet, without which no one can expect any good result in gastric diseases. Of the advantages of emptying the stomach of its contents, of washing out the organ, of Kussmaul's treatment when dilatation is present, Kussmaul himself has already given many examples, and the case related above illustrates it in a remarkable manner.

ROBERT SAUNDBY, M.D.

#### PETERSEN ON ACUTE POISONING BY SALICYLATE OF SODIUM.

IN the *Deutsche Medicinische Wochenschrift* (January 13th) Professor Ferdinand Petersen, of Kiel, details the following case of poisoning by salicylate of sodium. He remarks that, so far as he knows, the case is unique; the only cases hitherto recorded being of only subacute poisoning, or rather of disagreeable symptoms after the administration of over-doses of this substance. In a subsequent number he refers to the literature of the subject. The patient was a young girl aged 15, named Rebecca Horn, whom he describes as strongly built, of "blooming" appearance, although suffering from chronic fungating disease of the ankle-joint, for which he performed resection on the 11th of January. Up to the 14th all went on well, but on the 15th she was feverish, and the wound smelt offensively. On the 18th the wound was disinfected with zinc chloride, and the plaster of Paris bandage renewed. Next day she took several 1 gramme (15.5 grains nearly) doses of salicylate of sodium, without much effect. From the 22nd the patient took 4 grammes (about 1 drachm) of the medicine, when her temperature was 101.1° F. (38.6° C.); and when it amounted to 103° F. (39.4° C. or more) 6 grammes (1½ drachms nearly). This also had but little effect. On the 25th, in con-



sequence of a misunderstanding, the patient had the following doses, her temperature being as follows :—

HOURS.	vi	viii	x	xii	ii	iv	vi	viii	x
Temperature in degrees Fahrenheit.	101.1	101.6	100.4	101.9	103.3	103	103	102.2	101.5
Quantity of Sodium Salicylate.	1 dr.			1 dr.	1½ dr.	1½ dr.	1½ dr.	1 dr.	1 dr.

The two last doses were, fortunately for her, vomited almost immediately. Thus the patient had taken altogether, from 6 a.m. till the evening 26 grammes (401 grains nearly), or from noon till 6 o'clock in the evening 22 grammes = 340 grains. Professor Petersen saw her first in the forenoon of the 26th, and was struck by her anxious expression. She was restless, the face flushed, pupils very dilated, and scarcely responsive to light, with considerable divergent strabismus; respirations nearly 60 per minute, but not shallow; the pulse little quickened, if at all; the sensorium free, but speech difficult. Temperature at 6 a.m., 98.9° F.; at 8 a.m., 98.6° F.; at 10 a.m., 99.3° F. At noon she began to be delirious; temperature 101.1° F. She was ordered bromide of potassium. At 2 p.m., temperature 102.2° F. (bromide of potassium ½ drachm); at 4 p.m., 101.8° F. (bromide ½ drachm again); at 6 o'clock, 101.5° F.; at 7 o'clock, after the bromide, she was more tranquil. A peculiar regular alternation of symptoms was noted; at one time she had hallucinations, then lay in an uneasy half-wakeful condition; at one time she was quite conscious for a few moments, recognising those around her, though she seemed unable to see far, and answering questions. She spoke hoarsely, and by no means distinctly; she stammered, stuttered, and seemed unable to pronounce many words even when they were said to her first. There was a sort of glazy look about the eyes. Respirations 40, deep and noisy; pulse very irregular, sometimes very quick, sometimes almost as slow as normal, and then again small and weak. About fifteen minims of camphorated oil were injected. After noon there was swelling of the inguinal glands of the left leg (on the side of the resection), and considerable tenderness on pressure on the inner side of the thigh, but no redness. An ice-bag, and iced-water applications to the head and body, were ordered, the former on account of headache. On the 27th she was somewhat better. At 10 a.m. her temperature was 102.2° F., respirations 36, pulse small and irregular, about 120. The urine was as on the preceding day, of dark smutty brown colour, giving reactions of salicylic acid, and containing about 2 per cent. of albumen; quantity and specific gravity normal. She took egg and brandy, and continued the bromide. At 7 p.m. she still complained of much thirst and a feeling of dryness in the mouth and throat. On the forehead and rest of the face, on the neck and the legs (below the knees), there was a good deal of redness in circumscribed patches (erythema). The redness vanished on pressure, but returned again. Mydriasis and strabismus divergens were less evident, otherwise there was little change. 8 p.m., temperature = 99° F.; at 10 p.m. = 100.6° F. On the 28th the red patches had vanished from the original spots, but others had arisen. There was a bed sore about the size of a dollar, and rather deep, in the middle of the lumbar region. The patient had had no quiet sleep yet. Urine was still albuminous, and of dark brown colour; pulse, respiration, and temperature nearly

as before. January 29th, after some hours' quiet sleep she was somewhat better. The delirious intervals were longer apart, and she was less apathetic. Showed less difficulty and stammering in speech. The bromide of potassium was continued. On the 4th of February the urine for the first time appeared normal, her mind was clear, her appetite good, and she was free from the distressing symptoms.

The further history of the case is only of surgical interest, except so far as relates to her general health and appearance, which are again described as "blossoming" in October, although until the middle of April the temperatures remained subfebrile, and even in October the wounds were not healed. The tolerance of patients for salicylic acid and its sodium salt is very different in different individuals. Thus Goltammer (*Berlin Klin. Wochenschr.*, No. 4, 1876) had symptoms of poisoning after one of his patients took only 5 grammes (about 77 grains) whilst Stricker (*ibid.*, No. 1876) had a patient who took 22 grammes (340 grains) in 12 hours, without any severe symptoms. Nathan (*Inaug. Dissert.*, Kiel, 1875) gave a patient 26 grammes (401 grains) in 12 hours. In the case recorded above, the patient had very severe results after 401 grains in 12 hours, or after 340 grains in 6 hours. Some of her symptoms were novel. Feser and Friedberger (*Archiv für Wissenschaftl.*, and *pract. Thierheilkunde*, Band i, heft 2) found that it mattered little whether salicylic acid or its sodium salt were given. Binz (*Berlin Klin. Wochenschrift*, No. 27, 1876) thinks the acid of the salts is set free by the carbon dioxide in the body. In the case detailed the psychical symptoms were very marked. Her delusions were not of a cheerful nature as in Stricker's case (*Berlin Klin. Wochenschr.*, No. 8, 1876). These delusions and illusions made her weep, and she firmly believed in them. Her peculiar mental condition lasted about 8 days, the lucid intervals growing longer and longer. The temperature did not affect her mental condition. She remembers nothing of this condition now, except what she has been told of it. Riess (*Berlin Klin. Wochenschr.*, No. 50, 1876) has several times seen great excitement from the delusions. Stricker's cases before mentioned had cheerful delirium and delusions. Riegel (*ibid.*, No. 14, 1876) speaks of head-symptoms, sudden transient delirium, vertigo and headache, occurring in two cases. Schumacher (*Deutsche Med. Wochenschr.*, No. 18, 1876) mentions lively delirium after 5 (15 grain) doses of salicylic acid, with tormenting and painful hallucinations of sight. On another occasion there was much sleeplessness. Justa (*loc. cit. supra*, No. 22, 1876) saw sudden and severe disorders after about 2½ drachms of the acid, and about 4 drachms of the sodium salt, but the case was one of acute rheumatism with pericarditis. Headaches are a common symptom; impairment of vision, noticed in our case, is not mentioned by any one else except Riess. Feser and Friedberger saw dilated pupils in two dogs. In this case there were strabismus divergens and mydriasis to a great extent. Noises in the ears and partial deafness are very common symptoms. Dysphasia seems a new symptom. The hoarseness could not be elucidated by laryngoscopy, this being impossible. It lasted 45 days. Feser and Friedberger noted accelerated respiration in carnivora (herbivora were little affected, even in large doses). The acceleration of the pulse and heart was also noted by them in dogs, as also the irregularity of the circulation. Bartels and Lürmann noted the same in the human subject. Buss and Nathan say that the

pulse-frequency falls with the temperature, whilst Riess did not note any alteration of pulse, so that with low, normal temperatures, the pulse remained abnormally high.

In the case recorded here, the temperature was not affected, or very slightly. Though it fell next day there were no collapse-temperatures, such as Riess and Riegel record in delicate people; Golt-dammer records collapse after only 77 grains. Lürmann records an abnormally high temperature. The vaso-motor disturbances (erythema of wandering character, rapid formation of bed-sore, &c.) deserve note. The sweating on the first few days was enormous ("colossal," see Moeli, in *Berl. Klin. Wochenschr.*, No. 38, 1875). The gastric disturbances were trifling, there was little pain or diarrhoea, but the fæces were very offensive. The urine was of the usual type as regards colour and reaction, which lasted 10 days. There was no cedema of the extremities, as in Lürmann's case.

Professor Petersen quotes Bardenhewer, Moeli, Von Brunn, Riegel, and Fleischer; and refers to Nos. 26 of the *Berliner Klin. Wochenschrift* for 1876, and No. 39 of the same journal for 1875; also to No. 13 of the *Deutsche Med. Wochenschrift* for 1876. He concludes that salicylate of sodium is an antipyretic that must be used cautiously.

W. B. WOODMAN.

## MAUDSLEY ON THE ALLEGED INCREASE OF INSANITY.

SIX years ago, Dr. Maudsley endeavoured to show that there were not sufficient reasons to warrant the popular opinion that insanity was steadily increasing upon us year by year; that, in fact, the great and rapid increase of the registered insane population of England was in great measure to be attributed to other causes than an actual steady increase in the production of insanity. It seemed on inquiry very uncertain whether we manufactured more madness now than formerly, but very certain that we take care of, and know more about, the madness which we do manufacture. Six conclusions were then arrived at.

1st. There is no satisfactory evidence of an increase in the proportion of occurring cases of insanity to the population.

2nd. It is not necessary to assume the reality of such an increase to account for the increase in the number of registered insane persons.

3rd. The difference between one insane person in 802 of the population in 1844 and one in 400 of the population in 1870 is mainly due to the fact, that in the former year the official returns included only about half the actual insane persons in the country, owing to incomplete registration.

4th. Some part of the difference was owing to the fact that certain persons registered as lunatics then would certainly not have been regarded as such twenty-five years ago.

5th. A lower rate of mortality, and a lower percentage of recoveries on admissions, might account for part of the increase in the total amount of registered insanity.

6th. The proportion of admissions to the population, which represents approximatively the occurring cases of insanity, did not, when the necessary allowances were made for disturbing causes, yield evidence of any serious increase.

Since the above conclusions were arrived at in 1870, there has been such an increase in the number of the registered insane as to startle anyone at first sight. In January 1870 the number was 54,713, and on January 1st, 1876, it was 64,916; or from another point of view, there is now one insane person to 375 of the population, while in 1859 the proportion was one in 540 of the population.

On looking carefully into the matter, Dr. Maudsley is of opinion that much of this increase is owing to the successive Government regulations which have been made and enforced for the better supervision and care of the insane. Each new Act has been instantly followed by an increase in their numbers. The Act of 1845, enjoining the building of County Asylums, resulted in bringing upon the register numbers who had formerly been treated at home or farmed out. In most cases, the effect of this better care was to prolong life. The more liberal the diet, the smaller the mortality in asylums, is an established fact; and by the same reasoning the more liberal diet of the County Asylum served to keep alive many of the insane who, if left in their homes, would have died at an earlier period. We may therefore conclude that to some extent the numbers of the insane have risen, because they have not been kept down so much by death.

The Act of 1853 prescribed a quarterly return of all pauper lunatics not in asylums. Very few who resided with their friends had up to this period been returned, but after the passing of the Act the number slowly increased, until in 1871 there were 7,331. The Act of 1862 made pauper lunatics chargeable upon the common fund of the union of parishes, instead of, as had formerly been the case, upon the particular parishes to which they belonged.

Parishes realising the meaning of the Act lost all desire to spare themselves expense by taking care of their harmless lunatics, idiots, etc., at home, and were eager to throw the burden upon the common fund. From this time the Superintendents of County Asylums began to complain that their wards were crowded with chronic harmless cases, to the exclusion of acute and curable ones. The effect of this Act has been in operation since 1865, and will account for the increase from 1865 to 1874, which, allowing for the increase of population, is not alarming, and not calculated to support the thesis of an increased liability to insanity; for, while the ratio of pauper admission to the entire population was in 1865 1 to 2,831, it was in 1872 as 1 to 2,610.

The character of the admissions in 1865, when there was an abrupt increase, may be seen by the fact that the recovery rate in county and borough asylums was 33.88, against an average of 35.61 for the years 1859 to 1865. If we compare the admissions of various years, we find a more than usual rise in 1875 and an extraordinary rise in 1871. The explanation of the rise in 1871 will be found in the opening of the metropolitan asylums for imbeciles; for the removal to them of many chronic patients from the county asylums made room in the latter for a number of pauper patients who had formerly resided as private patients in licensed houses; and again, probably, many weak-minded and troublesome patients in the workhouses were discovered to be lunatics and sent to the metropolitan asylums.

The extraordinary increase of pauper admissions in 1875 may, in Dr. Maudsley's opinion, be distinctly attributed to the Act of 1874. The fact that the State would in future give 4s. per head per week towards the support of every lunatic in an



asylum, was sufficient to cause an immediate and large increase in the number of the registered insane. Chronic and troublesome cases, old and demented people, the bedridden and delirious, who were costing the Union more than four or five shillings a week, were obviously to be got rid of.

Again, the recovery rate in county and borough asylums shows the effect of this increase. In 1875 the rate was 34.11 per cent. of the admissions, or nearly 4 per cent. lower than that of 1874, and 1.5 per cent. below the average of the last 17 years. The smaller ratio of recoveries was due to the large proportion of chronic cases included in the admissions; and this, Dr. Maudsley thinks, may be represented as the measure of the success of the Act of 1874 in transforming aged and broken-down paupers into lunatics.

With regard to private patients, no satisfactory evidence of increase exists. In the year of the greatest number of admissions since 1859, that is in 1874, when they were as high as 3,534, the ratio to the population did not reach that of 1859, being 1 in 6,691, against 1 in 6,190 in 1859. These figures, far from proving an increase of insanity in the non-pauper class, prove rather a decrease.

CHARLES ALDRIDGE, M.D.

### LEPINE ON IDIOPATHIC ANÆMIA.

AT a meeting of the Société Médicale des Hôpitaux, held last July in Paris, M. Lépine read a memoir on this disease (see THE LONDON MEDICAL RECORD for September 1876, p. 398), which forms the basis of an important article published in the January and February numbers of the new *Revue Mensuelle de Médecine et de Chirurgie*. After introductory reference to the more exact methods of measuring degrees of anæmia which have been devised by Welcker and Malassez, including the *colorimètre* introduced a few months ago by the latter as a substitute for his *compte-globule*, M. Lépine proceeds to examine the recorded cases of fatal anæmia, whether described as idiopathic, grave, essential, progressive, or pernicious. He has endeavoured to include all described with sufficient precision during life, and followed by a *post mortem* examination. The need of such an historical inquiry is proved by the readiness with which unlearned persons announce the discovery of new diseases which have been long ago appreciated and defined by more experienced observers. "This", he remarks, "is what Professor Biermer did some years ago. Having at Zürich met with a certain number of fatal cases of anæmia, he took no notice of any of the facts already recorded, more or less analogous to his own, even those described by the illustrious Addison; but recommends as a new discovery, progressive pernicious anæmia; and such is the power of a somewhat sonorous title, that many physicians were not slow in following M. Biermer in the publication of cases of anæmia bearing the new title."

The first case of idiopathic or essential anæmia which M. Lépine cites is one recorded by Andral (*Clinique Médicale*, iii, 553-9, 1823). It is, he admits, imperfectly described, and may have been a case of Bright's disease. An isolated case of Piorry's (Polyanhémie (!) in the *Traité des Altérations du Sang*, 1840) in a man aged 50, who died anæmic with excessively thin heart and arteries, may with more certainty be recognised as essential anæmia. The

next two cases were published by Barclay in the *Medical Times* for 1851 as instances of "Death from anæmia." One in a man of 34 was certainly, the other in a woman of 40 probably, an example of the disease.

Passing over various memoirs on chlorosis and on the anæmia which often follows parturition, by Wunderlich, Canstatt, Schönlein, Lebert, and others, the author arrives at the first recognition of the disease in question by Addison, who in 1855 gave a graphic account of its clinical features, of its progressive course and fatal termination, and of the characteristic *post mortem* appearances. He distinguished these cases from those of anæmia associated with bronzed skin and diseased suprarenals with which his name has become indissolubly connected, and applied to the former group the characteristic title, "Idiopathic anæmia." The brief but complete description of the disease given by Addison (pp. 212-13 in the Sydenham Society's edition of his works) which M. Lépine has translated into French, we give here in the original.\* After stating that in these cases of idiopathic general anæmia "there had been no previous loss of blood, no exhausting diarrhoea, no chlorosis, no purpura, renal, splenic, miasmatic, glandular, strumous, or malignant disease", and remarking that "this very remarkable disease" occurred in both sexes, and was followed by a fatal result, Addison continued as follows.

"It makes its approach in so slow and insidious a manner that the patient can hardly fix a date to his earliest feeling of that languor which is shortly to become so extreme. The countenance gets pale, the whites of the eyes become pearly, the general frame flabby rather than wasted, the pulse perhaps large but remarkably soft and compressible, and occasionally with a slight jerk, especially under the slightest excitement; there is an increasing indisposition to exertion, with an uncomfortable feeling of faintness or breathlessness on attempting it; the heart is readily made to palpitate; the whole surface of the body presents a blanched, smooth, and waxy appearance; the lips, gums, and tongue seem bloodless; the flabbiness of the solids increases, the appetite fails, extreme languor and faintness supervene, breathlessness and palpitations being produced by the most trifling exertion or emotion; some slight œdema is probably perceived about the ankles; the debility becomes extreme. The patient can no longer rise from his bed, the mind occasionally wanders, he falls into a prostrate and half-torpid state, and at length expires. Nevertheless, to the very last, and after a sickness of, perhaps, several months' duration, the bulkiness of the general frame and the obesity often present a most striking contrast to the failure and exhaustion observable in every other respect. With perhaps a single exception, the disease, in my own experience, resisted all remedial efforts, and sooner or later terminated fatally.

"On examining the bodies of such patients after death, I have failed to discover any organic lesion that could properly or reasonably be assigned as an adequate cause of such serious consequences; nevertheless, from the disease having uniformly occurred in fat people, I was naturally led to entertain a suspicion that some form of fatty degeneration might

\* This is the more necessary, because, even in Dr. Greenhow's valuable monograph on Addison's disease, the original account of this malady is confused with that of idiopathic anæmia. Compare pp. 4-5 of Dr. Greenhow's book with the quotations above.

have a share, at least, in its production; and I may observe that, in the case last examined, the heart had undergone such a change, and that a portion of the semilunar ganglion and solar plexus, on being subjected to microscopic examination, was pronounced by Mr. Quekett to have passed into a corresponding condition."

After this remarkable disease had been thus accurately defined, and its distinctive features, both clinical and pathological, laid down, it becomes easy to follow the new cases recorded, and to decide on their genuineness. The first group which M. Lépine has discovered, are nine published by Wilks in the *Guy's Hospital Reports* for 1857 as cases of "Fatal anæmia", four in women and three in men, seven of them with the results of *post mortem* examination; in each of these interstitial fatty degeneration of the heart is noted. In his remarks Wilks places these as illustrations of the idiopathic anæmia lately discovered by his colleague. A case of fatal anæmia soon afterwards published by Trousseau, and which now appears in the third volume of his *Clinique Médicale* (p. 63) was probably one of splenic leuchæmia; but another case of anæmia in a young man of 21, where no important lesion was found after death, which was published in 1860 by Cazenave (*Journal de Médecine de Bordeaux*, p. 53) was apparently a genuine case of the new disease, the first recorded in France, although in ignorance of Addison's and Wilks's papers. Omitting doubtful cases, the next well-marked example with necropsy occurred in a woman of 40, and was published in 1863 (*Lancet*, p. 518) by Dr. Habershon, who was, of course, acquainted with his two colleagues' observations. This paper was cited by Potain in his article, "Anémie", in the *Dictionnaire Encyclopédique*, and seems to have been the first to call attention to the discovery abroad.

In 1865, and again in 1869, Perroud of Lyons (*Lyon Méd.*, 1869, tome iii, p. 281) described "fatal anæmia" with access of fever, anasarca, and fatty degeneration of the viscera, and detailed four cases (three in men) with necropsies, which M. Lépine counts as the third group of cases following the publication of Addison's description, Wilks's seven coming first, and then Cazenave's and Habershon's. One almost precisely similar was published at Bologna in 1869 by Corazza, under the title *Oligæmia with Chlorosis and Fatty Degeneration of Organs*.

Next in order of time appeared Gusserow's six cases with necropsies, all occurring in pregnant women (Hochgradigste Anämie Schwangerer, *Arch. für Gynécologie*, 1871, Band ii, p. 218); and soon afterwards Biermer's memoir on a peculiar form of "progressive perniciose Anämie" appeared in the *Correspondenzblatt für schweizerische Aerzte* (1872, Band ii, No. 1). His cases all occurred in women; and he particularly called attention to the tendency to œdema, neuroses, and anorexia, the palpitation, anæmic murmurs and intercurrent pyrexia, and lastly to the minute hæmorrhages which were nearly constant in the retina, not unfrequent in the pia mater, but rare as petechiæ of the skin, as epistaxis or hæmaturia. Fatty degeneration of the heart was almost constant. M. Lépine observes: "If MM. Gusserow and Biermer had made some bibliographical researches, they would not have committed the error of believing that the malady which they observed was peculiar to Zürich. In November 1871, a few weeks before M. Biermer's publication, Dr. King published, in a very widely circulated journal (the *Lancet*), the following observation." Then follows a brief summary of a well-marked case of idiopathic anæmia in a woman aged

27, where the necropsy shows complete absence of visceral disease, and apparently of fatty degeneration. [This case, reported by Dr. Robert King, of the Middlesex Hospital, was under Dr. Greenhow's care, and appeared in the *British Medical Journal* for November 25, (p. 613).—*Rep.*]

In 1874, Professor Immermann, of Basil, published (in the *Deutsches Archiv*, Band xiii) three cases, of which, however, only one was accompanied by a necropsy. It was an ordinary case of idiopathic anæmia in a woman of thirty-one; and, except fatty degeneration of the heart, there was no lesion found after death.

Passing over certain cases published under the title of pernicious anæmia, where the anæmia was really secondary to various other diseases, M. Lépine mentions as the next in order two published by Dr. Pepper in the *American Journal of Medical Sciences* (October 1875), in which extreme anæmia, fatty degeneration, and ecchymoses were the only *post mortem* results. In January 1875, Dr. Broadbent's case, in a lad treated by phosphorus, had appeared in the *Practitioner*; and in the same year Dr. Pye-Smith had published two cases, both in men, with necropsies, in Virchow's *Archiv*, Band lxxv, with a vindication of Addison's priority in the recognition and description of the disease.

Next follows a paper by Scheby-Buch in the *Deutsches Archiv* (Band xvii, p. 467), with two detailed cases; and in the same year another by Quincke in Volckmann's *Sammlung* (No. 100) with eight cases, besides one in which there was no necropsy, and another in which the patient is said to have recovered. The last on M. Lépine's list are Dr. Bradbury's case (*Brit. Med. Journal*, August 19th, 1876), which was unsuccessfully treated with phosphorus; two which occurred in Professor Küssmaul's clinic; one by M. Ferrand (*Bull. de la Société des Hôp. de Paris*, Nov. 24, 1876); and finally the one reported by himself, which will be found recorded in the last volume of this RECORD (p. 398).

All these forty-six completely reported cases, with *post mortem* results, agree in their clinical features, in their fatal result, and in the absence of previous severe hæmorrhage, of organic disease, and of leukæmia, whether splenic or lymphatic, with the clinical and pathological account given by Addison of idiopathic anæmia. They form a body of facts from which M. Lépine draws the following conclusions.

1. As to *etiology*, there appears to be a clear connection of idiopathic anæmia with insufficiency of food, and also with the pregnant condition in women, and a less decisive one with dyspepsia, hard work, and loss of fluid by slight hæmorrhage or by diarrhœa.

2. The *symptoms* during life are, on the whole, very constant. Most cases, especially the most marked, which occur in male subjects, bear out Addison's description of the remarkable *persistence of fat* in spite of the weakness and pallor; but in others, mostly those which have been preceded by hæmorrhages, by insufficient nourishment, or long continued dyspepsia or diarrhœa, there is excessive emaciation before death. The *cardiac murmurs* which exist may lead to mistaking idiopathic anæmia for organic disease of the heart. The *pyrexia*, which generally accompanies the disease, is irregular, both in its periods and its height, but rarely passes 104° Fahr., and, as a rule, entirely subsides shortly before death, when a temperature below normal is not infrequent. Some observers, among them Strümpell, have found that the discharge of *urea* is increased,



but this does not cease when the temperature falls.

3. The *anatomical lesions found after death* appear to be the direct result of persistent anæmia: they are *œdema, ecchymosis* of the serous membranes, the retina and other parts, and *fatty degeneration* of the abdominal viscera and *of the heart*. M. Lépine thinks that the frequent "tabby-mottling" of the muscoli papillares of the mitral valve may explain the presence of a systolic apex-murmur, as due to actual regurgitation. Fatty degeneration of the liver, the kidneys, the peptic glands, and the cerebral arterioles is much less constant.

The experiments of Ponfick and of Tolmatschew prove that this form of degeneration may be artificially produced by repeated bleedings. The ecchymoses of the retina may be due, like those of the meninges, to rupture of vessels which have been weakened by fatty degeneration of their coats, or of the minute aneurisms described by Charcot and Bouchard. [See new observations on this point below.]

4. *The Condition of the Blood*.—M. Lépine has remarked that in certain cases of death from exhaustion and anæmia, however brought on, there has been a marked discoloration of the viscera—different from the well-known dark tinge given by neighbourhood to the colon—and quotes an observation of Professor Grohé, who found that this dark colour depends on the presence of ferrous sulphide. He suggests that this may have some relation to the remarkable deep yellow tint of the adipose tissue in cases of idiopathic anæmia noticed by other observers, and to the curious yellow staining of the fingers described by Dr. Broadbent as the result of handling the organs in his case, "which made them look as if stained with nitric acid". The blood during life is not only diminished in actual quantity, as shown by the emptiness of the heart and veins, but the red corpuscles are diminished to a fourth, a sixth, or even, in M. Lépine's own case, measured by Malassez's *compte-globule*, to a tenth of their normal number. The proportion of white corpuscles has not yet been so accurately measured; but it is certain that they are not increased as they are in leukæmia. The red corpuscles have been observed by Ferrand and Hayem to be somewhat larger than usual, and rather deeper in colour; Quincke, on the contrary, thought them paler; many have observed that they do not readily form *rouleaux*. A peculiarity of the blood in cases of idiopathic anæmia is the presence of minute red corpuscles, not above a fourth of the normal size, of deeper colour, and without the characteristic biconate shape. Their presence was first observed by Quincke, and has been confirmed by Eichhorst. [Both papers appeared last year; Quincke's in Volkmann's *Sammlung*, No. 100, Eichhorst's in the *Centralblatt für die medicin. Wissenschaften* for June 24th.] That the presence of these "microcytes" is not diagnostic of essential anæmia is proved by their absence in several carefully observed cases, and by their presence in one of splenic leukæmia. In a case of leukæmia myelogenica published last October by Cohnheim (Virchow's *Archiv*, Band lxxvii, p. 291), there were, beside these red microcytes, nucleated red corpuscles found in the blood. [Several other microscopic observations on the blood are noticed by M. Lépine. See the continuation of this article.—*Rep.*]

5. *Relation of Idiopathic Anæmia to other Diseases*.—In a certain minority of cases, the spleen has been found more or less increased in size; and these might perhaps form transitions to the rare cases of pseudo-leucémie (leucocytosis, anæmia lymphatica)

with lymphatic growths in the spleen alone; distinct on the one hand from Virchow's leuchæmia splenica by want of increase of leucocytes in the blood, and on the other from Hodgkin's disease by want of enlargement of the lymph-glands. Such cases Dr. Lépine quotes as recorded by Müller (*Berliner Klin. Wochenschr.*, 1867), Pye-Smith (*Path. Trans.*, 1870), Mosler (*Path. und Ther. der Leuchämie*, 1872, p. 188), and Landouzy (*Soc. Anat.*, 1873, p. 67).

Since the discovery of the cytogenic function of red marrow by Bizzozero and Neumann, the bones have been carefully examined in cases of fatal anæmia, but generally with negative results. Even the affirmative statements made by Pepper, by Ponfick, and by Scheby-Buch cannot be regarded as conclusive. The only complete and satisfactory investigations of the point which led to a positive result are those by Professor Cohnheim and by M. Fede. The former (in the paper above quoted) reports the marrow of all the bones, in the shafts as well as in the cancellous tissue, as red, almost entirely destitute of the normal fat-cells, and made up of (1) ordinary medullary leucocytes, more numerous large colourless corpuscles with one or two nuclei, and a few giant-cells (myéloplagues); (2) of a few ordinary red blood-discs, large spherical non-nucleated red corpuscles, and a much larger number of nucleated coloured cells of variable size, but generally twice as big as a normal leucocyte. These same nucleated red corpuscles were also found in the blood-clots of the veins and in that of the liver and spleen. Cohnheim asks whether they may not be red corpuscles which have been imperfectly formed, returning, in fact, to an embryonic condition, and thus rendered incapable of circulating in the blood. The clinical features of the case (that of a man aged 35, under Professor Biermer's care at Breslau) were those of idiopathic anæmia, and there was no hypertrophy of the spleen, lymph-glands, or other cytogenic organs.

M. Fede's case occurred in a woman aged 50, exhausted by insufficient food, hardship, and bleeding, who died with symptoms of general and extreme anæmia, accompanied by slight pyrexia. There was no leukæmia, but the number of red blood-discs was diminished after death. The liver and heart were found in a state of fatty degeneration. The spleen was three times its normal bulk. All the bones were increased in size, and their compact tissue was more or less replaced by cancellous. There were a number of symmetrical exostoses on the thoracic vertebrae. The red marrow of the diseased bones was found to contain, beside normal leucocytes, large white corpuscles with one or two nuclei, and others still larger, containing red blood-discs in their interior like those normally found in the splenic vein, but no nucleated red corpuscles. M. Fede suggests that the anæmia of his case was produced by excessive destruction of red blood-discs in the bones as well as in the hypertrophied spleen.

M. Lépine believes that these two cases must be considered as genuine essential anæmia instead of being ranged with other forms of anæmia lymphatica, including Hodgkin's disease, the intestinal form described by Heschl and Béhier, and the various mixed forms in which spleen and lymph-glands and marrow have each and all been the seat of the disease. He would, then, classify cases of idiopathic or essential anæmia into three groups, according to their dependence on lesions of the cytogenic organs (*anémie progressive splénique et médullaire*), on precedent malnutrition, diarrhoea, etc. (*a. gastro-intestinale*), or on frequent pregnancy (*a. gravidique*). M. Lépine sug-

gests, in conclusion, that some cases of supposed idiopathic anæmia may really depend on the presence of the *sclerostoma (ancylostoma) duodenale*, which has been observed in Italy and Brazil as well as in Egypt: the symptoms of this "tropical chlorosis" closely resemble those of essential anæmia.

P. H. PYE-SMITH, M.D.

[To be continued.]

## MOSLER ON THE MEDULLARY FORM OF LEUKÆMIA.

In the *Berliner Klinische Wochenschrift*, December 1876, Nos. 49, 50, 51, and 52, is a series of papers by Professor F. Mosler, on the Clinical Symptoms and Treatment of Leukæmia as it affects the Medulla of Bones. The subject is one of considerable importance, but has attracted as yet but little notice in England since Neumann first called attention to it. There are, at present, very few observations on the *post mortem* appearances of such cases, and none of their recognition during life. The author, after referring to the already cited cases by Neumann, and to those by Waldeyer and Ponfick, goes on to say that two forms of leukæmic hyperplasia may be distinguished in the bones. In one, the marrow is yellow, greyish-yellow, or greenish-yellow, here and there looking like pus; in the other, it is grey red, or muscle-red, jelly-like, juicy, and glassy. The first instalment towards the symptomatology of this new form of leukæmia was found in a well-marked case of splenic leukæmia under Dr. Mosler's care, and in which there had been pain in the sternum during life. After death, a general affection of the skeleton was found, not unlike a purulent osteo-myelitis.

In the present communication, a second case is recorded. A man, 45 years old, a ship's captain, was seized with pain in the breast and gastric oppression after exposure to inclement weather. Later on, he had pain in the left thigh when walking. The patient was in good general health, and without distinct signs of anæmia. The sternal pain was particularly noticeable, not only on percussion, but also on pressure. The heads of some of the bones were swollen and painful on pressure. The left posterior superior iliac spine was in a similar condition, and the left trochanter also. The remainder of the skeleton was but little abnormal. The spleen was much enlarged; the blood of the colour of *chocolat au lait*. The white corpuscles were in the proportion of 1 to 5 red, and they showed an unusual variation in their size; the red corpuscles very spinous, and much molecular matter lay about. Transfusion was first adopted, 210 grammes of defibrinated human blood being injected into the left radial artery; at the same time, 200 grammes of leukæmic blood were taken from the right median vein. Very little relief seems to have been afforded by these means, rather the reverse, for rigors and fever followed, and the wound in the radial artery was so difficult to control that the patient lost nearly two-thirds of a pint of blood from it. The excessive pain in the sternum was still as noticeable as ever, but the ribs had returned to their normal condition. A microscopical examination of the blood showed that the red corpuscles were remarkable for their processes and indentations—the white of two quite different forms; the one double the size of the other, and full of small fat-granules. This larger form, never observed in his earlier cases of leukæmia, leads Dr. Mosler to

affirm that they are characteristic of medullary leukæmia. The red were to the white corpuscles in the proportion of 3 to 2. The patient was now faradised, twice daily for 15 minutes, over the splenic region, and piperine, oleum eucalypti, and hydrochlorate of quinine, were administered internally in the form of a pill three times daily. Under this treatment he improved so much, that it was with difficulty he could be persuaded to remain in the hospital. The tendency to bleed had disappeared, and the body-weight had increased a pound. The spleen and liver had become considerably smaller, and the blood, though still showing a remarkable variation in the size of the corpuscles, contained only one white to nine red. Notwithstanding this amelioration, within the last few weeks, elastic tender swellings had appeared on several of the ribs.

To complete the diagnosis, the diseased sternum was now explored by Professor Paul Vogt. The bone was very soft, and a blood-tinged mass was withdrawn in the cannula, which contained in quantity large white corpuscles, similar to those in the blood. Red blood-corpuscles and oil-drops were present more sparingly. By undertaking this exploration, Mosler remarks, the diagnosis of medullary leukæmia has been proved for the first time during the life of the patient.

The medicinal treatment was continued with still further improvement, so that it would seem that therapeutics brought about a retrogression, or, at least, a stationary condition of the leukæmic process.

The etiology of medullary leukæmia has hitherto received but little elucidation; it could hardly be otherwise when the symptomatology was so very incomplete. Leukæmia has been ascribed to abdominal obstructions, menstrual disturbances, syphilis, ague, intestinal catarrh, etc.; and injuries have been thought to lead to its production, more especially to that form affecting the bones. This case and another seemed due to a severe chill. With regard to the question of priority of attack, whether osseous or visceral, stress is laid upon the fact that, in the case with which the paper deals more especially, the early symptoms were pains in the bones, and not till long after came the feeling of discomfort in the region of the spleen. Considering that the patient was a man of more than average intelligence and thoroughly trustworthy, Mosler thinks it fair to conclude that the affection was a primary medullary leukæmia. He agrees with Neumann, that the changes in the bone play an essential part in the pathogenesis of leukæmia; but he thinks that the varieties of the disease are usually combined, and he does not agree that the splenic and lymphatic changes are always sequential, and that in the bone-marrow constant. This opinion is supported by other cases by Ponfick and the author, in which the bone affection was, apparently, secondary to the splenic. Ponfick's case was that of a man who, in the year 1874, received a severe blow in the left side. This was followed by a violent pain, which compelled a relaxation of work for some time. It ceased, and then returned, and gradually all the symptoms of splenic leukæmia manifested themselves. The author's own case has been already recorded in Virchow's *Archiv*, Band lvii, p. 534. A man of 44 had long suffered from intermittent fever and pain in the side, and splenic swelling remained. In considering the origin of the disease, the clinical symptoms must be taken into consideration, and in those cases of primary bone-disease the bone pain has been early and spontaneous. Ponfick holds with regard to this



point that it is impossible to say positively in what part the disease commences, and it may be that, commencing in one locality, it may stop or remit there while the process crops up with fresh activity in some parts far remote.

In all forms of leukaemia two stages can usually be distinguished: 1, that of the prodromata, and the maturation of the leukaemic process in the blood and the organ primarily affected—a stage which shows considerable variation in its length, from a few days to many years; and, 2, a stage of diffusion of the disease to other viscera. In the author's case, the latter was far advanced, and spleen, liver, and glands were enlarged, besides the affection of the bones.

The number of white corpuscles was remarkable, two white to every three red; a larger proportion than the author had ever before seen. They were examined carefully, and their identity with the cells of bone-marrow established; while, at the same time, such cells are only occasionally present in the splenic pulp. A specimen of the blood was examined by Neumann, who agreed to the presence of peculiar large colourless blood-cells, similar to those he had noticed in other cases, in one of which the necropsy showed a markedly puriform appearance of the bone medulla. These cells are probably characteristic of medullary leukaemia, but, seeing that they have been found in the blood of some cases in quantity, and in that of others only occasionally, it is possible that the proportion in which they exist may indicate when the bone affection is the primary or essential disease, when the secondary only, or sequential.

Neumann has also noted, as characteristic of the myelogenous form of leukaemia, the contemporary appearance of nucleated blood-cells in the blood and marrow. He believes that these all offer a means of recognition of this particular variety of disease. Mosler, however, has never succeeded in detecting them in spite of frequent search. The treatment which recommends itself to Mosler as the result of his own practice, and that of numerous others, both clinical and experimental, is, the subcutaneous injection of solutions of carbolic acid, and the internal administration of the drugs before mentioned—oleum eucalypti, piperine, and quinine. Transfusion may occasionally be of use, and faradisation in the region of the spleen, as recommended by Botkin (*Die Contractilität der Milz.*, Berlin, 1874), and Skorzewski (*Wiener Medizin Wochenschrift*, 1876, No. 21), has occasionally done good.

[The paper closes with an account of some experiments with the above-named drugs upon dogs; but they are not numerous, and the sources of possible fallacy seem to be so many in the conditions under which they were performed, that, although the spleen became considerably smaller after the administration of the drugs, the reporter does not think they materially strengthen the arguments derived from the clinical study of leukaemia. The latter are by no means strong at present in favour of a primary disease of the medulla of bones, but the question is one for further work, and Mosler's paper is of interest and value in calling attention to the subject.—*Rep.*]

JAMES F. GOODHART, M.D.

## DESSAN ON THE THERAPEUTIC VALUE OF SMALL DOSES.

AT a late meeting of the Medical Association of New York, Dr. S. Henry Dessan read a suggestive paper on The Value of Small and Often-Repeated Doses, which is reported in the *Philadelphia Medical Times* of July 21. His attention was directed to this subject, he said, by the admirable work of Sidney Ringer on Therapeutics. He has found the method an agreeable as well as useful one, particularly in the case of children, and he has had an opportunity of carrying on his investigations in the New York Foundling Asylum and the district service of the New York Dispensary. In these he has been guided partly by the recommendations of Ringer and other recent authorities, and partly by ideas occurring to himself. The following are some of the results obtained. In the vomiting of infants and young children, due to various causes, he found the wine of ipecacuanha in one-drop doses every hour of great efficacy, and it was also very useful when diarrhoea was present. Fowler's solution in the same doses proved equally serviceable in the vomiting after a debauch, and in the morning vomiting of chronic alcoholism, either alone or combined with from three to five grains of capsicum. In the vomiting incident to some forms of phthisis and chronic bronchitis, he found alum in two- to five-grain doses, repeated every one, two or three hours, to act most happily. After pertussis there was frequently a cough, without much bronchitis, and occasionally accompanied with spasm of the larynx, which continued for a long time, and he had found that this also was promptly relieved by alum, in from one- to three-grain doses, which might be given in syrup of wild cherry. In a form of bronchitis occurring in children, alluded to by Ringer, which was characterised by loud wheezing and asthma-like respiration, and which was chiefly troublesome at night, tartar-emetic proved the most efficient remedy. The strength of the solution used was from one to three grains to a pint of water, and of this a teaspoonful might be given every hour or so. In continued bronchial catarrhs, especially if accompanied by diarrhoea, it was also of great service.

In syphilis, when there was such severe cephalalgia as to render the patient perfectly miserable, one-sixtieth of a grain of calomel, given every hour, acted like magic. In gastro-intestinal catarrhs in children he had used calomel in one-sixteenth of a grain doses successfully; but better still was the hydrargyrum cum creta in one-sixth-grain doses. When the stools were of a mucous character, whether containing blood or not, corrosive sublimate was indicated. It was given in a solution of the strength of one grain to sixteen ounces of water, a teaspoonful being ordered every hour. In gonorrhoea, when the case was seen within twenty-four hours from the commencement of the attack, the disease was promptly cut short by injections every hour of a solution of sulphate of zinc of the strength of only one grain to the pint of water.

Dr. Dessan said he believed he had been the first to use copaiba in urticaria, and he had been induced to try it in one-drop doses every hour, on the ground of *similia similibus curantur*. In retarded menses he had used one-drop doses of the fluid extract of ergot, and in dysmenorrhoea five-drop doses of fluid extract of hamamelis, with success; while in uncomfortable flushes at the time of the menopause one-tenth of a drop of nitrite of amyl had been of

service. The tincture of aconite in one-drop doses was exceedingly useful in scarlatina, and tincture of cantharides in the same doses in subacute vesical catarrh. The mineral waters so much in vogue at the present day are also an illustration of the value of small doses, since the active salts in them were in exceedingly minute quantities. Though much of what he had said, Dr. Dessan remarked, might seem to favour the doctrines of homœopathy, he had seen too many cases of intermittent fever cured by large doses of quinine, too many cases of dysentery cut short by drachm- or half-drachm-doses of ipecac, and too many cases of delirium tremens at once relieved by a tablespoonful of tincture of digitalis, to commit himself to any such dogma as that. If asked upon what principle he gave these remedies, he would reply, On that of actual experience. Many drugs undoubtedly had a primary stimulating effect if given in small doses, while in larger doses they were powerfully sedative.

He believed with Stillé that the effects of medicines could not be properly determined upon healthy subjects, because in them there was lacking an important element which might modify it very greatly. In the light of recent investigations by various authorities he thought it would be a good plan to have the doses of all the agents in the *Pharmacopœia* so regulated as to produce the greatest possible effect with the smallest possible quantity, and that if this was done it was probable that the doses of many disagreeable medicines would be materially diminished.

## ANATOMY AND PHYSIOLOGY.

HEUBEL ON THE DEPENDENCE OF THE WAKING CONDITION OF THE BRAIN ON EXTERNAL IRRITATIONS.—Dr. Emil Heubel, of Kiev (Pflüger's *Archiv*, Bd. xiv, p. 158) publishes a long contribution to the physiology of sleep and the confirmation of Kircher's *experimentum mirabile* and hypnotism; but it is not a little strange that in connection with this subject the name of Braid of Manchester is never mentioned.

It is a well known fact that many animals which have been held or prevented from moving for a short time, and when they have become quiet are again loosed, remain for a few minutes quite motionless, often in the most unpleasant and unnatural position. Kircher, who in 1646 experimented on hens by drawing a line with chalk before their eyes, was the first who directed attention to this subject. Recently, in Germany, J. Czermak experimented upon the ordinary hen, on the turkey, duck, goose, swan, on pigeons, and on small singing birds. He recognised the fact that this condition might be produced by simply holding these animals gently for some time and then carefully removing the hand. He regarded the result as a genuine hypnotic condition. Preyer, of Jena, experimented not only on hens, but also on rabbits, guinea-pigs, and on frogs. He observed that the animals closed their eyes for a short time, and he explained the phenomena as due to the condition of terror or fright produced in the animal by the experimenter. After a time, he says, the animal becomes quiet, and if the hands are now gently removed, it remains quiescent for a short time because it believes it is still held. The author in his explanation neither agrees with Czermak nor with Preyer. He finds that of all animals, the frog

—*rana temporaria*—is best suited for this experiment. If a frog be placed on its back with its leg and thigh flexed on the abdomen, and so retained by the hands until the attempts at movement have subsided, and if then the hands be quietly removed, it will be found that all movements have ceased, and in the greater number of experiments the frog remains from one to two, not unfrequently three to four hours, nay, even five to six hours, completely motionless, does not make the slightest voluntary movement; not the slightest traces of movement, except those of respiration and circulation, are to be observed. The duration of this condition varies in different frogs, and it may take 10 to 15 minutes to produce it. Sometimes the condition may be produced within a minute or two. With regard to the explanation of these phenomena, the author rejects both that of Preyer and that of Czermak; the former, because his explanation does not meet those not unfrequently occurring cases in which the condition occurs where the animal has made no considerable resistance, and has not therefore had the opportunity of acquiring the necessary experience; further, Preyer could not have his animals for hours in this condition, but only the initial stages were exhibited by them. It is important to notice that the author finds that a frog whose cerebrum has been removed can be thrown into the same condition, which can be produced as rapidly and lasts as long as in the normal frog. Even when the optic lobes are removed, it can be produced, but the animal generally remains for a shorter time in the supine position. In this case, with only the medulla and cerebellum present, it cannot be said that the condition of the animal results from consciousness, and it cannot be regarded as the expression of "resigned terror." That the explanation of Czermak that it is a "genuine hypnotic" condition, due to fixing and steadily gazing at an object placed in front of the eyes is false, is shown by the fact that it may be produced in frogs rendered totally blinded by section of their optic nerves, and birds whose eyes were completely closed exhibited the phenomena most strikingly. The experiments of Goltz showed that after the removal of various parts of the brain a frog might be brought to lie on its back; and it may be assumed that, as long as this toleration of the supine position lasts, voluntary movement and consciousness are suppressed. The author regards the condition as a normally physiological one, as *ordinary more or less deep sleep*. The phenomena exhibited by an animal in this condition are cessation of voluntary motion, closure of the eyelids, total or partial and often considerable contraction of the pupil. Very important changes occur in the respiratory and circulatory systems. At first, when the animal struggles, there is acceleration both of the respiration and of the heart's action, but as soon as sleep commences a regular rhythm and retardation of the respiration occur, the latter more pronounced the deeper the sleep. The respirations may sink from 90 or 100 per minute to 38 or 26 in a minute; they become more and more superficial, and sometimes almost imperceptible. There is also pronounced relaxation of all the voluntary muscles. Czermak observed cataleptic phenomena sometimes to appear. Dr. Heubel has observed a similar condition. Further, the reflex excitability in the later stages is always more or less diminished; and, lastly, the skin was observed to become paler in colour. A frog in this condition can be awakened from this condition in the simplest and easiest manner. This seems to



show that one has not to deal with a pronounced alteration of the peripheral or central nervous system, but rather with a physiological condition, viz., that of sleep. Both light and a noise easily awaken the animal. What is the cause of this sleep? The change from the waking condition to that of sleep is caused by the removal of those stimuli which, by acting on the sensory nerves under ordinary conditions excite the brain. Those excitations which powerfully excite the brain are conveyed to it through the organs of sense, through the eye and earspecially, and also through the sense of smell, numerous and important excitations through the sensory nerves of the skin. Here it is specially to be noted that when the frog lies upon its back a smaller cutaneous area is affected, besides when the lower limbs are flexed on the abdomen the plantar surfaces of the feet richly supplied with nerves are excluded. Also a great number of impressions that proceed from the viscera are normally of little consequence. It is to be noted that the experiment succeeds best when all these sources of irritation of the brain are as much as possible avoided. It is often impossible to produce the condition with the animal on its belly. The author regards it as certain that as soon as the animal is placed under conditions so that all or the chief mass of the excitations continually affecting the brain through the sensory nerves are suddenly removed, the waking state of the brain cannot be preserved, but must pass into sleep. The author sees a confirmation of his views in the theory of sleep recently advanced by Pflüger. It is further to be noted that the brain not only soonest but also relatively and most completely loses its capacity for acting during sleep. It therefore follows that the brain is much more dependent than all other centres on the supply of external excitations through centripetal nerves. The results may be summed up thus. By establishing certain external conditions every frog can at any time be thrown into a state of longer or shorter sleep, which can be interrupted at any moment; the conditions for the production of this sleep consist in removing as completely as possible the excitations continually proceeding from the sensory nerves to the brain.

**LEWIS ON THE INFLUENCE OF VARIOUS ALKALOIDS ON THE GENERATION OF ANIMAL HEAT.**—These researches are described at length by Mr. Bevan Lewis in the *West Riding Asylum Reports* for 1876. An improved form of calorimeter was used, and the theory of its application is fully entered into. The amount of heat-production is conveniently expressed by the number of heat-units generated for each gramme of body-weight.

The physiological action of *atropine* exhibited two distinct periods, viz., a primary dilatation of the arterioles, a copious heat-discharge with a fall of body-temperature, and a total heat-production in 15 minutes of six to eight gramme-units for each gramme of body-weight; then a period of arterial spasm, lessened heat-production with elevation of body-temperature due to heat-retention. The falls in blood-pressure and temperature noticed by Bezold, Bloebaum, and others, are thus confirmed, with the additional evidence of a greatly increased heat-formation. It is interesting to observe that small doses, whilst productive of large heat-formation, have a primary stimulant effect on the vaso-motor system, accompanied by a retention of heat; and Mr. Lewis shows how, by the employment of frequent minute doses, a

febrile condition may be kept up for a prolonged period.

Results with *solanine* indicate a retention of heat together with a marked decrease in thermogenesis. The writer sums up his results with this alkaloid by stating that, "In Experiment 1, after three successive periods of arrested heat-formation (with retention), we obtain a sudden registry by the calorimeter of nearly 14 kilogramme heat-units per quarter hour, equivalent to 8.4 heat-units for every gramme of the animal's weight; thence, through a period of declining temperature, thermogenetic activity reaches the normal standard."

With *hyoscyamine*, Mr. Lewis has been able to confirm the explanation afforded of its physiological action by Dr. Robert Lawson (*West Riding Asylum Reports* 1875). Thus, with small doses, there was a diminished thermic discharge, followed by increased heat-formation, with rapidity of its discharge. The primary stimulant effect on the sympathetic, preceding paresis of the par vagum, does not occur in the administration of larger doses.

*Strychnine* in minute doses produces increased heat-formation as a primary effect; this period being, however, much shortened as the dose is increased to a toxic amount, and being then succeeded by a general and extreme spasm of the arterioles, evidenced by a fall in body-temperature of 3.1° Fahr., and an almost total arrest of heat-formation temporarily. The latter result is independent of convulsion, as Wood has shown that a rise in arterial pressure occurs in curarised animals during strychnine-poisoning. A vascular tetanus thus precedes the muscular tetanus. The antagonism of chloral to strychnine was then examined, and the writer asserts that, "In all convulsive attacks, whether such as are induced by toxic agents, such as strychnine and picrotoxine, or those affections of the motor-cells significant of abnormal charging to excess with potential energy resulting in convulsive discharges, the passage from a labile to a stable equilibrium by remedial agents appears always to depend on vaso-motor changes." I think it highly probable that in such cases we simply divert the discharge into another channel, and the heat-discharge thus induced may be regarded as a correlation of the motor discharge from the spinal centres". Allusion is made to an interesting case of epilepsy where an aura preceded for some time each attack, and in which the administration of chloral, whilst arresting the convulsion, gave rise to elevation of temperature.

*Picrotoxine* produced as a primary effect from 10 to 38 heat-units per gramme of body weight every half hour; but this period of increased thermogenesis is prolonged far beyond the corresponding period in strychnine-poisoning. It is then succeeded by a marked vascular spasm, a minimum of heat-production, and great alternations of thermic discharge.

With *ergotine* the primary stage is suddenly induced and of short duration. The conflicting opinions of Holmes and Ebertz are alluded to, with regard to the effects of ergotine or arterial pressure. The results obtained by Mr. Lewis lead him to accept the views of Brown-Séquard, who insists upon a primary vaso-motor spasm, and a subsequent vaso-motor paralysis.

With *chloral* the important fact is established of a large increase of heat-formation as well as a rapid discharge, the temperature of the body often falling 6.3° Fahr. (represented by 2,016 heat-units in the period of one hour). Hammersten's observations that the fall in body temperature depends upon less-

ened heat-formation appears, therefore, to be fallacious. The increased dispersion from the body favoured by arterial dilatation, proves the absolute necessity of keeping the surface of the body covered warmly in cases of chloral-poisoning. When small doses are given, and the results carefully and frequently estimated, a primary diminution of heat-formation is recognised, not due to retention, for the body-temperature falls at this period. This confirms the views of Anstie, Andrews, and Bouchet, that sphygmographic tracings indicate a primary increased arterial tension with small doses, due to capillary contraction.

Seven tables, embracing over two dozen typical experiments from a large number of calorimetric observations, conclude the paper.

WM. STIRLING, D.Sc., M.D.

LITTEN ON THE EFFECTS OF HIGH TEMPERATURES ON THE ORGANISM.—Dr. M. Litten (*Virchow's Archiv*, May 1876), says that, as the increased temperature is the most striking phenomenon of, though not identical with, fever, the changes in the organs and the organic processes which take place in this state are of the highest interest. The animals employed in his experiments were guinea-pigs, as they were found to survive longer than any others. The apparatus which he used was a covered double-walled vessel of copper, 27 cm. in diameter, and 22 cm. in height; between the two walls was water, by warming which the air inside could be raised to any temperature desired. Three air-tubes at the sides acted as ventilators. In the cover were three holes for the reception of thermometers and gas-regulators. Heat was at first maintained by a gas-jet, kept at a constant height by a Bunsen's regulator; but as this only succeeded partially, oil- or spirit-lamps were substituted, and with some trouble a constant temperature was attained. The maximum temperature in which the animals could remain alive for a long time, varied between 36 and 37° cent. (96.8 and 98.6 Fahr.), but in a very well ventilated apparatus animals may be kept all day at from 39 to 40° cent. (102.2 and 104 Fahr.) He employed a large number of guinea-pigs in these experiments, and they were always exposed to a temperature of 36° cent. in moist, or 37° cent. in dry air. The results were always the same. The temperature was measured *in ano* before the animal was placed in the apparatus, and then daily many times up to its death. The examination of the body was always made immediately after death, provided the animal died during the day.

The constant change observed was fatty degeneration, which, at earliest, supervened after 36 hours, and always after lengthened observations attained a quite excessive degree. The liver always showed this change first, next the heart and the kidneys (two or three days)—the first, in some cases, even earlier. The next were the striped muscles, the respiratory muscles (diaphragm and intercostals) earlier than the others, and often as early as the heart. The longest duration of any observation was five to six days.

The following changes were observed in an animal which had remained 128 hours in the apparatus at a temperature of 36° Cent. (96.8° Fahr.) The liver and kidneys were very yellow; the heart and muscles showed no naked eye changes. Microscopically, the liver showed all the cells filled with fatty globules, which hid the nuclei; rarely there were

only two or three globules which permitted the nucleus to be seen between them. The kidneys had their tubules often filled with fatty granules, and in other places the epithelium was very fatty, so as to hide the nuclei; the glomeruli were well preserved, and showed a slight granular condition; the organs were very anæmic. The muscles were throughout altered; the most marked changes being in the walls and papillary muscles of the heart; the entire sheaths of sarcolemma were filled with fat globules, so that the contractile substance could not be recognised. The diaphragm and intercostals came next in degree of affection, was less pronounced in the rest of the muscles; where it was greatest the transverse striation was lost, in other places the drops lay in rows between the fibrillæ. The muscle-nuclei showed a slight degree of fatty change. The vessels were only altered in places, and most so in the choroid plexuses and the pia mater; less so, but still distinctly, in the smaller branches of the coronary arteries. The fat-globules were generally in the adventitia, fewer in the muscular coat, and only in places showed themselves in the nuclei. The brain and cord showed no abnormality. The lungs were intact, except for numerous small hæmorrhages. The alimentary canal presented slight changes, only a little fatty degeneration of the gastric glands. In the blood, the peculiar blood-crystals of the guinea-pig were observed, and also irregular colourless masses, which were studded with nuclei and oil-globules; otherwise, it appeared quite normal. This case showed the changes in the highest grade, but they never failed when the animal had been 36 to 48 hours in the apparatus.

These changes were of two kinds; in one filling the cells, in the other filling the sheaths of connective tissue, so that their normal contents could not be recognised. The liver was like the fatty liver of man, with the difference that it looked much yellower to the naked eye. The masses in the blood were identified with those seen in the blood of typhus and other infectious diseases. The changes in the blood-vessels were constant, but never led to hæmorrhages; especial attention was paid to this point on account of certain forms of hæmorrhage being commonly attributed to a hypothetical fatty degeneration of the blood-vessels. The wasting of the animals was very remarkable, and out of all proportion to the wasting which healthy animals without food undergo at normal temperatures. At the end of three days, the animals always received some food. It might be said that these appearances were not pathological; on this account, the author used guinea-pigs, whose tissues contain very little fat, and only employed full-grown animals, as in young ones, especially in the liver, a high degree of fatty change is present. The state of the muscles surpassed in a high degree anything that could be regarded as physiological.

To estimate the amount of carbonic acid inhaled, the author used the same apparatus made absolutely air-tight. The air was sucked out of the box by a Bunsen's aspirator, and the air used measured by a gasometer. The estimation of the carbonic acid was made according to Pettenkofer's method. The fallacies in this method are of the smallest. He raised the temperature to 36 or 37° Cent. (96.8 to 98.6° Fahr.), and estimated the carbonic acid as soon as he was sure of an approximate constancy of the animal's body temperature; this occurred in from six to eight hours, but by that time they had not reached as high a temperature as they were able to stand.



Previously, the normal exhalation of carbonic acid had been estimated on the same animals, and they had been starved for 50 hours before the commencement of the investigation. He gives the results of 13 observations in a table. In every case, the amount of carbonic acid exhaled was diminished, sometimes 50 per cent. or more. This differs from the results of Sanders-Ezn and Pflüger, but agrees with those of Röhrig and Zuntz. Sanders' animals had their heads free and breathed cold atmospheric air, but the author's were shut in the box and breathed the warm air contained in it. He thinks that the changes produced in the red blood-corpuscles by high temperature explain the diminution of carbonic acid by the decrease of oxygen absorbed. According to M. Schultze, Wertheim, and Manassëin, the red corpuscles in high temperature are destroyed, being smaller and fewer. This is in unison with Bernard's observation, that whereas venous blood ordinarily contains 12 to 15 per cent. of oxygen, that of animals subjected to high temperatures contains only 1 to 3 per cent. Moreover, A. Schmidt found the blood in the heart of a guinea-pig, which had died under high temperature, free from oxygen.

Voit and Pettenkofer have thought it probable that albumen might be converted into fat, whenever on its destruction there was not sufficient oxygen to oxidise it all to carbonic acid and water; the remaining becoming fat after the nitrogen was set free. In this way, the fatty degeneration, diminution of carbonic acid, and increase of urea excreted, may all be connected with the diminution of oxygen absorbed, resulting from the changes in the blood-corpuscles due to the high temperature. Litten seems to have made no observations on the increase of urea, taking it as established. He proceeds to apply these results to the pathology of fevers, and considers that any differences between them and those obtained directly from fever patients depend on something else than the high temperature in the latter. He also applies them to the fatty changes in phosphorus-poisoning, and in poisoning by carbonic acid (he has observed marked fatty changes in animals subjected to chronic carbonic acid poisoning), also to anæmia and phthisis.

ROBERT SAUNDBY, M.D.

**GOWERS ON THE AUTOMATIC ACTION OF THE SPHINCTER ANI.**—The object of observations made and recently recorded (*Proceedings of the Royal Society*, No. 179, vol. xxvi, p. 77) by Dr. Gowers was "the determination of the forces of the reflex or automatic action of the sphincter ani in man when voluntary power over it is lost". According to Masius (*Journal de l'Anat. et Phys.*, 1868, p. 197), this action depends on an "ano-spinal centre" seated in the lumbar enlargement of the spinal cord, controlled in health by the encephalic centres. It seems, however, to be very uniform in varying conditions, the most evident common character of which is entire loss of voluntary power.

The observations were made mainly on a man in whom the posterior roots of all the sacral nerves, and both roots of the lowest of these nerves, had been injured by a fall on the sacrum. Sensation was abolished in all parts supplied by the sacral plexus, the limitation being exact. Muscular paralysis and loss of nutrition were limited to the levator and sphincter ani, and vesical sphincter, these being paralysed to the will. The anus and the mucous membrane of the rectum were devoid of sensation. There was no evidence of injury to the spinal cord, the sole lesion being seemingly a severance of direct

communication between the sphincter ani and the spinal cord. Two paraplegic patients were also subjects of observations, in whom the lesion was limited to the dorsal region of the cord, the lumbar enlargement being unaffected. In each case, voluntary retention of the contents of the rectum was abolished, the sphincter ani being in a state of high reflex activity. The instrument employed in the research was a cylinder of India-rubber, mounted at each end on a wooden plug, conical at the anterior end, so as to aid in its introduction. The chamber within communicated through a flexible tube with the cavity of a tympanum carrying a writing lever, by which variations in pressure could be recorded on a revolving drum—an arrangement like that of Marey's cardiograph. Through the middle of the cylinder passed a metal tube, by which air could be injected into the rectum without disturbance of the instrument.

The first fact ascertained was that the sphincter ani was in a persistent state of tonic contraction, although the incontinence of fæces was complete, a condition quite independent of the pressure of the instrument. This could, however, be inhibited by the application of any irritation, *e. g.*, the injection of a small quantity of air into the rectum. The relaxation was, however, always followed by a gradual return of the contraction (indicated by a rise in the recording curve), until the original pressure, or even one a little higher, was attained. An indication of a tendency to rhythmic action is seen in tracings showing the effect of a cough; the cough being first followed by a slight fall, owing to the movement of the instrument lessening the amount of its compression by the sphincter. It had been previously observed by Goltz (Pflüger's *Archiv*, vol. viii, 1874) in dogs that, after division of the dorsal cord, a rhythmic action was set up by the presence within the sphincter ani of a foreign body. In man, on the other hand, no reflex action is excited by an unirritating body within the anus, provided that it be kept still; but it was found that the continuous injection of a jet of air into the rectum invariably set up a rhythmic action, the rapid fall occurring immediately after the beginning of the injection being succeeded by a quick rise, followed by another fall, and so on—a series of nearly uniform curves being recorded. Goltz also observed that a strong sensory impression on the hind legs of a dog inhibited the rhythmic contractions of the sphincter. In every form of stimulation it was observed that a period elapsed after the beginning of the stimulation before there was any change in the degree of contraction—the average of five measurements after a cough being one second. The duration of the subsequent fall was from  $\frac{3}{4}$ ths of a second to one. The more considerable the fall the longer was its duration. The length of the rhythmic contraction caused by a continuous injection of air varied much; some of the curves being of considerable length, lasting from 12 to 17 seconds. In these, the fall was much steeper than the rise. These curves thus resembled that obtained after any sudden stimulation, and seemed to be merely a succession of such curves "resulting from the intermitting inhibition consequent on the alternate accumulation and escape of air". The longest complete inhibition under a continuous injection of air lasted 30 seconds. This might, therefore, easily have been mistaken for permanent relaxation. Comparison of these results with the action of the sphincter under normal conditions bears out the conclusions inferred by Masius and

Goltz, from experiments on dogs, that the reflex action and tendency to rhythmic variations is controlled by the higher encephalic centre. The internal sphincter was probably alone concerned in the reflex action, the external one being in each case relaxed. Dr. Gowers draws special attention to the points of resemblance between the reflex action of the internal sphincter and that of the middle coat of the intestine in peristaltic action, which indicates that this muscle, apart from the will, is under the control of a similar mechanism. The action of both is under central control, inhibited by the vagus, intensified by the splanchnics. As the sphincter may be regarded as an aggregation of bundles of fibres, such as are contained in the transverse muscular coat of the intestine, so may the latter be regarded as a serial arrangement of the bundles of which the internal sphincter is composed. An action of each bundle of fibres so arranged, such as is seen to occur in the sphincter as a whole, must result in peristalsis, in the propulsion of a contained and stimulating body along the intestine. The effect, then, of the presence of a mass of fæces in the intestine would be to cause, first, in the moderately contracted intestinal wall in front of it, an increased contraction, the effect of which would be to prevent the diffusion of the contents along the intestine (which would interfere with their movement); secondly, complete relaxation of the next portion of the intestinal wall into which the contents of the intestine would pass; and, lastly, a strong contraction behind, sustained, and moving on the stimulating body, as the initial contraction gave place to relaxation. It is worth noting that the presence of the instrument in the anus, after the effect of its introduction had passed off, was no longer a source of irritation, just as faecal contents may be at rest within the bowel, and, if they be not moved, nor irritate the mucous membrane, may excite no peristaltic action.

**TOMES ON VASCULAR DENTINE.**—The following classification of dentine is adopted by Mr. Tomes. (*Proceedings of Royal Society*, No. 197, p. 43, 1877).

1. Hard unvascular dentine, of which the characters are sufficiently known, since it occurs in most mammalian teeth.

2. Vaso-dentine, which is developed from odontoblasts after the manner of dentine, but contains an anastomosing network of canals modelled around, and containing capillaries. The teeth of the hake are good examples of this tissue, in that they have large pulps, are richly vascular, and the red blood circulates abundantly through the capillary channels of the dentine, so that the teeth, when the fish is alive, are brilliantly red. The transition between typical vaso-dentine and the preceding variety is gradual.

3. Plici-dentine, of which the teeth of *lepidosteus*, and, in a much higher degree, those of the labyrinthodont, offer examples, is developed from odontoblasts; but from a complicated pulp, so that it is more or less divided up into distinct systems of dentinal tubes.

4. Osteo-dentine, a constituent of the teeth of the pike and of many plagiostomi is, like bone, developed from osteoblasts, being quite unlike dentine. It is permeated by a system of large canals, which do not contain, or have any special relation to, blood-vessels.

This attachment of the teeth of the hake is so peculiar as to be worth special notice, the inner and larger of the two rows of teeth being set upon elastic hinges, which allow their flexion towards the throat, but cause them to spring back into the up-

right position when pressure is removed. This arrangement, which occurs also in the "angler," is of obvious advantage to this voracious predatory fish. The vomerine and palatine teeth of the pike have a similar hinged mode of attachment, so that they oppose no obstacle to the swallowing of prey.

**GARROD ON THE MECHANISM OF THE INTER-VERTEBRAL SUBSTANCE.**—In the *Proceedings of the Zoological Society*, part i, 1877, Professor Garrod makes some brief observations upon the intervertebral substance in man. In works on human anatomy, the intervertebral discs are described as made up of a central elastic cushion with a laminated fibrous investment, the individual fibres of which, instead of running straight from vertebra to vertebra, are arranged obliquely, those of one layer crossing the next at a considerable angle. No explanation as yet has been put forward of the mechanical advantages of this arrangement. If the fibres, instead of crossing, had run parallel, and at right angles to the surface which they joined, the median elastic pad would have efficiently retained the vertebræ at a distance from one another, under ordinary circumstances. But in the case of jumping, for example, when the feet have just reached the ground, the momentum acquired by the head and other extremities would compress the pad and diminish the distance between each two vertebra. At this moment, if the upper part of the body have the least tendency to obliquity in its downward movement, the relaxed outer fibres of the intervertebral substance would allow the body of the upper vertebra to slide upon the one below it, and so diminish the capacity of the spinal canal, as well as the stability of the column. A forcible attempt to rotate the body upon the spine would, under similar conditions, be also attended by compression of the elastic pad, and a considerable rotatory gliding of the vertebræ on one another.

These difficulties are entirely surmounted by the existing mechanism, as may be demonstrated by a model—of which figures are given—consisting of two circular discs of wood connected, with an interval between, by tapes of the same length, arranged obliquely, crossing one another, and attached to opposite points on the margins of the discs. Thus connected, no gliding of the discs upon one another is possible, the only movements feasible being their approximation, either at all points, or at any one point where compression is employed.

J. C. GALTON.

**DE SINÉTY ON THE DEVELOPMENT AND COMPARATIVE HISTOLOGY OF THE MAMMA.**—In the *Annales de Gynécologie*, April 1877, Dr. De Sinéty remarks that, since the experiments of Eckhard on the physiological action of the nerve-fibres which supply the mamma, no important work has appeared on this question. Roehrig and Eckhard have found that in the goat there is a nervous branch which, if excited, leads to the erection of the nipple. Dr. De Sinéty was struck with the fact that in the guinea-pig neither irritation of the mammary nerves nor direct irritation produced an erection of the nipple, as they do in woman and she-goats. In woman, the nipple is traversed by a certain number of galactophorous canals. These canals are lined with cylindrical epithelium, and surrounded by muscular fibres lying horizontally and vertically. He has pointed out this condition in cases of retraction of the nipple. In the guinea-pig, there is only one galactophorous canal



near the base of the nipple. This is covered with a layer of pavement epithelium, resembling cutaneous epithelium. There are only a very few muscular fibres, and these are horizontally; he found no muscular fibres having a longitudinal direction. Dr. De Sinéty thinks the paucity of the muscular fibres explains the absence of erectile power in the nipple of the guinea-pig. FANCOURT BARNES, M.B.

HAMMOND ON THE STRUCTURE OF THE RED BLOOD CORPUSCLE IN THE TROUT.—Mr. W. H. Hammond (*Monthly Micros. Journal*, June 1877) refers to certain observations of his on that point, by which he has been able to demonstrate the presence of a nucleus whilst the blood circulates in the living animal. This is important, as some writers have considered the nucleus to be formed artificially by exposure to the atmosphere, or by means of chemical reagents.

GASKELL ON THE BLOOD-VESSELS OF MUSCLE UNDER THE MICROSCOPE.—A paper on the above subject, by Mr. Gaskell, has been abstracted into the *Monthly Micros. Journal* for June. He describes the blood-vessels of the mylo-hyoid in the frog. The rhythmic action of the arteries of the web begins as a contraction, the vessel returning to its usual calibre; but in the muscle the vessel first dilates, and then gradually returns to its original calibre or below it. These dilatations vary much in extent, and are absolutely irregular in time, and appear to depend on chance stimulation. Again, stimulation of the web by an interrupted current produces marked constriction of the vessels between and around the electrodes. In the muscle, however, there is no constriction of vessels immediately around the electrodes, but marked dilatation. Section is always followed by rapid dilatation of arteries in five to six seconds, reaching a maximum in 20 to 30 seconds, and then gradually diminishing to the original calibre in four to five minutes after section, the resultant phenomena being similar to those following stimulation by mechanical or chemical means.

RICHARDSON ON THE BLOOD-CORPUSCLES OF DIFFERENT RACES OF MAN.—The well recognised authority of Dr. J. G. Richardson on the micrometric measurements of the red blood-discs will render a recent paper of his on this subject both welcome and interesting. It is abstracted in the April number of the *Monthly Microscopical Journal* from the *American Journal of Medical Sciences*. He adopted the novel expedient of examining the blood of individuals of different nationalities who visited the American Exhibition last autumn. In the table of results thus compiled, we find almost all the European nationalities represented, together with Japanese, Mulatto, and Cherokee Indian. Combining these deductions, it was found that the average diameter was  $\frac{3}{32} \frac{1}{2}$ , the maximum  $\frac{3}{32} \frac{7}{8}$ , and the minimum  $\frac{3}{32} \frac{1}{8}$  of an inch; 83 per cent. measured between  $\frac{3}{32} \frac{1}{8}$  and  $\frac{3}{32} \frac{3}{4}$  of an inch; 8 per cent. were less than  $\frac{3}{32} \frac{1}{8}$ ; and nearly 9 per cent. were more than  $\frac{3}{32} \frac{3}{4}$  of an inch in diameter. The Italian, Swedish, and Norwegian specimens gave somewhat smaller averages, but importance cannot be attached to this fact without further research. BEVAN LEWIS.

#### RECENT PAPERS.

Remarks on Hitzig's Theory of Electric Action. By Dr. A. Brückner. (*Berliner Klin. Wochenschrift*, July 2.)

#### PATHOLOGY.

LASSAR ON ŒDEMA AND THE LYMPH-STREAM IN INFLAMMATION.—Dr. O. Lassar (Virchow's *Archiv*, March 1877) gives an account of his experimental researches on this subject. He produced inflammation in the hinder extremity of dogs by injecting a 20 per cent. emulsion of petroleum or oil of turpentine. One injection causes an abscess; repeated injections cause diffuse suppuration. Or he used Cohnheim's method of ligaturing the limb, and leaving it for five or six minutes in water, heated to 50° or 54° Cent. (122° or 129° F.). The animals were all large strong young dogs, and were curarised, respiration being kept up artificially. It is essential that the animals should be at absolute rest, on account of the influence of muscular movements on the lymph-current.

From the lymphatics of the hind leg of a dog, under normal circumstances, a scanty drop exudes about every ten minutes, and only with great difficulty can a cubic centimetre be collected. But in inflammation a large quantity comes spontaneously, and by passive movements 20 to 30, or even 40 cubic centimetres, may be obtained very quickly. The lymphatic glands became swollen and red, and under the microscope were seen to be filled with fine oil-globules, when the inflammation was induced by the injection of emulsion. He considers whether the increased quantity of lymph is due to an increase in the current, or to the pressure of the exudation, and shows that the quantity of lymph begins to augment as soon as the inflammation begins, or rather as soon as the irritative means have been employed. Emminghaus showed that ligature of a vein was followed by rise in the outflow of lymph, and that slackening the ligature was followed by a return to the physiological condition; so that a great uniformity exists, so far as concerns the lymph-stream, whether the œdema is caused by inflammation or by obstruction. But the mechanism in the two cases must differ, for, as Arnold has shown, the enormous increase of capillary pressure present in obstruction does not occur in inflammation, and many characteristic differences between inflammatory and obstructive œdema prove that in inflammation chemical and morphological conditions affect the blood-vessels in quite a different way from the mechanical damming up of the circulation. If the sciatic nerve be cut, and the limb so ligatured that the digital arteries still pulsate, in 24 hours the foot will become œdematous. The lymph in this case is thin, slightly tinged red, imperfectly coagulating. The cellular elements are almost exclusively red corpuscles, with a few white ones almost lost amongst them; the fibrin is almost at a minimum, and is less than the normal percentage in dog's lymph. Inflammatory lymph, on the other hand, is a yellowish, rather opalescent thick fluid, which coagulates as soon as discharged, often within the cannula, and contains only few red, but a great quantity of white corpuscles. The dried residue exceeds that of normal lymph noticeably, and that of obstruction lymph many times. Section of the sciatic nerve remained without any definite influence on the quality or quantity of inflammatory lymph. The entire residue of inflammatory lymph was quite twice as much as that of obstruction lymph; but the difference of the ash was not so great. In experiments on the head and neck, he found no very great difference in the lymph-stream on the sound and the affected sides,

and he infers that communications exist between the two sides. The inflammatory lymph presented its characteristic conditions as well before as after passage through the lymphatic glands. The concentration of the fluid increased with the duration of the inflammation. Since A. Schmidt showed the importance of the white blood-corpuscles in the formation of coagula, it has been recognised that a plasma increases in coagulability in proportion to its richness in colourless elements. This held good of the inflammatory lymph, so that in very diffuse inflammation it formed a lining of coagulum in the lymphatic vessels themselves, which became stiff and inelastic. In gangrenous inflammation the lymph-stream completely dried up. All the characters of the inflammatory exudate, in his opinion, tell against Arnold's hypothesis of pre-existing stomata in the walls of the vessels, or why do such different elements pass through in obstruction and in inflammation? He remarks that it is possible to diagnose the inflammatory or obstructive origin of an exuded fluid, provided the blood is not hydræmic. Participation of the lymphatic glands in the inflammatory process appears to be of slight influence on the lymph-stream. Electrical irritation of the glands had no influence on the nature of the lymph-stream, except that it mechanically caused an outflow of their accumulated lymph. The whole of the dried residue of the lymph in these experiments was preserved and the ash analysed. 1,000 parts of inflammatory lymph contained 137.67 parts of ash; 1,000 parts of obstruction lymph contained 112.83 parts. The following table gives the results of the analysis of 100 parts of the ash of each.

Inflammation.	Obstruction.
Chloride of Sodium.....76.086 .....	74.429
Potassium.....5.987 .....	2.155
Sodium.....3.214 .....	3.574

The chloride of sodium appears constant in the both kinds, but the potassium and sodium appear to bear a relation to the concentration of the lymph.

R. SAUNDBY, M.D.

VON PUKY ON SEPTIC AND MICROCOCCIC INJECTION.—Dr. A. Von Puky, of Buda-Pesth, has an article on this subject in Virchow's *Archiv*, vol. lxi. His researches aimed at the solving of the question "if micrococci accompany always, or only in certain cases, septic injection". He used only rabbits for his experiments.

As the yolk of eggs is rich in globulinous substances, in which respect it resembles pus and the products of inflammation, there may be formed similar products by its decomposition. The putrid yolk was then brought into the organism, either by subcutaneous injection or by injection into the jugular vein. For some experiments, an emulsion was prepared from the fresh yolk, which was carefully preserved in clean vessels until putrefaction was noticed.

All organs of the animals were carefully examined after death, both macroscopically and microscopically. The yolk-masses were at certain periods likewise examined, and it was always found that they contained fat-drops, fat-cells, fat-crystals, vibriones, and fine corpuscles and granules, having the character of micro-organisms.

The author arrived at the following results.

1. The fresh yolk injected had no effect upon the animals.

2. The injection of the putrid yolk had a much stronger effect when made into the vessels than if

made subcutaneously. In case the yolk had an acid reaction, death followed several times during or soon after the injection, while death followed not so often in case of a more neutral reaction. Poisoning was caused in these cases even without the simultaneous growth of micrococci. The putrid yolk must, therefore, contain substances that act like common poisons, and it is not always necessary that in cases of putrid infection the micrococci present in the putrid substance must be absorbed. Moreover, it will be evident that putrid substances may cause poisoning in men if organic substances undergo putrefaction on them.

3. The putrid yolk lost its poisoning power when it was boiled for an hour or longer.

The author found further that an injection of the emulsion of the putrid yolk was followed by putrid poison, if it were only several days old, and that the vegetation of micrococci followed if the preparation had several weeks' time to putrify. In this case, the original acid reaction of the emulsion loses its strength, in consequence of which the development of micrococci is favoured. Besides, micrococci are only generated in the animal if the yolk had undergone putrefaction as an emulsion, but not if the emulsion were prepared from the putrid yolk.

DUKE CHARLES OF BAVARIA ON THE ACCUMULATION OF WHITE BLOOD-CORPUSCLES IN THE CORTICAL PORTION OF THE BRAIN.—The Duke Charles of Bavaria, M.D., contributes an article on this subject to Virchow's *Archiv*, vol. lxi.

Popoff observed that in typhoid fever and in typhus there may be found in the brain white blood-corpuscles, not only in the neighbourhood of ganglion-cells, but even in their substance, in which case they might cause a division of the nuclei of those cells. These facts might be considered an anatomical base for the brain-symptoms in those diseases, in case they should be confirmed. The duke examined about fifty brains to contest Popoff's observations. Among this number there were two from healthy persons, beheaded on account of being convicts; twenty-two were from persons deceased in all stages of typhoid fever, and others were from persons who died by pneumonia, meningitis, nephritis, general fatty degeneration, etc.

The result of his examination was, that in the cortical portion of every brain there are found numerous white blood-corpuscles. In general, they may accumulate on account of a retarded circulation, combined with an increase of the quantity of water in the brain.

Among the localities where the corpuscles are deposited, the author noticed the ganglion-cells, around which one, three, and sometimes even six or eight were placed. But they never penetrate the substance of those cells, and, of course, do not cause a division of their nuclei. Besides, there were found corpuscles in the perivascular spaces of His, in Robin's adventitial canals, and in the periganglionic spaces. The latter are considered by the author as lymph-spaces, connected next with His' spaces. The brain-symptoms do not depend upon the presence or enlarged number of the white blood-corpuscles, nor upon the retarded circulation, nor lastly, upon the increased quantity of water in the brain (provided this comes on slowly), but must be considered as the expression of a sudden increase of these three agents. Of course, the fever and its causes must likewise be taken in consideration in that respect.



## RECENT PAPERS.

Syphilitic Arteritis with Multiple Formation of Aneurisms. By Dr. Chvostek and Dr. Weichselbaum. (*Allgemeine Wiener Medizin. Zeitung*, July 10, 17.)  
 On Primary Cancer of the Biliary Passages. By Dr. J. Schreiber. (*Berliner Klinische Wochenschrift*, July 30.)

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 MEDICINE.
 

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JACOBS ON JAUNDICE.—Dr. Julius Jacobs (*Virchow's Archiv*, March 1877) publishes five cases of hepatogenous jaundice, in all of which bile-acids were present in the urine. In the first case, jaundice was caused by a mechanical occlusion of the hepatic duct; in the second and fourth, it was catarrhal in its origin; in the third, the kind of obstruction was not ascertained; and in the fifth the ductus choledochus was closed by a calculus. The researches of Röhrig and Landois have shown that the bile-acids in the circulation diminish the heart's action, and thence lead to lowering of the surface temperature. In the third case, which was quite chronic, and without any trace of febrile symptoms, the temperature was subnormal ( $35.3^{\circ}$  to  $36.9^{\circ}$  Cent. =  $95.5^{\circ}$  to  $97.5^{\circ}$  F.) In the first case the temperature was normal, but this was probably due to a slight degree of fever, as the urea was increased; the same occurred in the second case. In the fifth case, in spite of an acute suppurative peritonitis, the temperature was only moderately elevated. In a similar way the action of the heart was diminished in case 3 (a chronic one); the pulse was always subnormal. In case 4, in spite of hypertrophy of the left ventricle, the result of renal disease, during the jaundice the pulse never exceeded the normal in frequency or tension, although it did so before and afterwards. The quantity of urine excreted was about normal.

The chlorides were normal in cases 1 and 3; in case 2, as in all fever cases, they were diminished. In the commencement of fevers, he says, they are always less, but increase later, with the disappearance of the febrile symptoms. The urea was normal in cases 2 and 3; in case 1 it was much increased. He refers to a case of Rosenstein's of acute yellow atrophy, published in the *Berliner Klinische Wochenschrift*, 1868, No. 15, in which the urea was much increased; and he cannot see how to reconcile these facts with Meissner's theory. The uric acid in three of the cases was a little increased beyond Becquerel's standard of half a gramme for 24 hours; but he thinks the method he employed was not very exact.

The phosphoric acid, in the only case in which it was estimated (2), was diminished, if we accept Neubauer's standard in health of two grammes for 24 hours.

In the last four cases the bile-acids were always present. In the first, at the beginning, they were absent, but afterwards were abundant, and could be detected by Pettenkofer's test alone. He generally employed this test according to Hoppe's method. He thinks we must believe that under some circumstances the bile-acids are converted into bile-pigments, as Frerichs thought.

In cases 1 and 4, after administration of benzoic acid, hippuric acid was sought for, and found in the first, but not in the second. Kühne failed to find hippuric acid in the urine of icteric patients, even after the administration of benzoic acid; he therefore concluded that in jaundice, in spite of the presence of bile-acids, the blood contained no glycocholic acid or

glycol, as it is only in the presence of these two substances, as Kühne and Hallwachs had previously shown, that benzoic acid is converted into hippuric acid. Kühne thinks, too, that in jaundice only taurocholic or cholic acid is formed by the liver. Nay, he believes he has proved that the only acid shown by Pettenkofer's test is cholic acid. That this does not hold good of all cases of jaundice, was proved by Folwarczny, who demonstrated crystals of hippuric acid in the urine of four cases of icterus, after the administration of benzoic acid, while Neukomm and Schultzen found hippuric acid in the urine of jaundice, without having given any benzoic acid. It is of great interest to notice that no hippuric acid was found in case 4 (chronic renal disease), as it is very probable, from Meissner's and Shepard's investigations, that hippuric acid is formed in the kidneys.

ROBERT SAUNDBY, M.D.

KOLB ON A CASE OF THROMBOSIS OF THE CEREBRAL SINUSES.—In the *Berliner Klinische Wochenschrift* for November 13, 1876, Dr. Karl Kolb [of Kaiserslautern], reports the following case. Theresa F., aged 17, of strong build and well nourished, suffered when 13 years old from purulent discharge from the right ear. She was only deaf two days, and at this time the discharge only lasted about a week, but it recurred frequently, and she stated that she had suffered much from headache. Two years ago she kept her bed for a fortnight, on account of a severe attack in the ear, but she could give no details of this illness. She had also slight hæmoptysis. In October 1874, she had great discharge from the ear, which ceased after the application of leeches, and syringing with tepid water. Her fresh attack began in October 1875, and was ushered in by an eight days' discharge of blood-stained matter from the ear. The discharge was dark red, sometimes contained clots; and, according to the patient, pure blood ran from the ear on one of these days. From this time to November 3 she suffered from severe headache, especially in the right side, increased by movement, disturbed sleep, or complete sleeplessness; for several days *rigors* recurring daily, oedema and inflammatory swelling of the skin, chiefly over the right mastoid process, and in the course of the internal jugular vein, and upwards towards the temporal fossa. A greatly swollen vein ran across the mastoid process. There was also tumefaction of the skin of the forehead and of both eyelids, with slight exophthalmos of the right side. There was intolerance of light; movement of the head was very painful; and both eyes were spasmodically closed, and difficult to open. The pupils were of equal size and moderately dilated. There was no discharge from the ear. There was almost total deafness in the right ear, whilst on the left side her hearing was almost normal. The pulse was variable, but generally slow. Her temperature was not increased. The appetite was moderate, and the bowels constipated. After admission to the hospital there was vomiting, three to nine times a day. She complained of vertigo. On November 6 night-wandering set in, and then confusion of thought during waking hours, and general convulsions of a severe kind. On the 7th she had general hyperæsthesia, interchanging with delirious dizziness and mental hebetude. The temperature was normal all through. The highest evening temperature being only  $99.8^{\circ}$  F. The pulse ranged between 62 and 90 per minute. After a week her symptoms ameliorated, and on November 16 they had all vanished. Only the want of sleep and hebetude lasted till the 13th,

and even after that date there was some delirium, chiefly when half awake. The clonic spasms ceased after the 15th. These from the 10th had chiefly affected the right arm, the flexors of which being in tonic spasm in the intervals, had bent the right elbow at an acute angle, and the right leg. The hyperæsthesia was also chiefly on the right side during this period. The headache became milder, and more diffused. The inflammatory swelling diminished, and on November 16 was almost limited to the region of the mastoid process. After the 14th the vomiting ceased, and on the 15th she again slept. Sight and hearing improved, and her appetite was good. During this period of amendment she had an eruption of tender hæmorrhagic spots, of the size of lentils, on the right lumbar region, on a surface about 4 ins. in diameter. At the same time, there was stabbing pain in the left side of the breast. After the 12th a dry cough, and on the 16th bleeding from the right nostril. These hæmorrhagic spots lasted about a week, and then a second spot, about two fingers' breadth distance, was similarly affected. On the 19th she left her bed, and till the 23rd only complained of pain, lasting one day, in the left knee. On this day, however, she had a fresh attack of the symptoms, and a third on December 12. On the 20th she complained of much giddiness, and had more severe tonic and clonic spasms, with retraction of the head and loss of consciousness, dilated pupils, and twitchings of the ocular muscles. From this till the 29th daily she had epileptiform attacks. On the 26th and 27th (after some hæmoptysis) the catamenia appeared. On the next day she had intense pain in the belly, and increasing meteorism. The urine was first passed in drops, and then in a more powerful stream, but only when the bladder became fully distended. On the 30th she had severe headache, and redness of the right side of the head and face. Convulsive attacks from time to time followed. On January 8 and 9 there was a good deal of erysipelatous swelling of the forehead and nose. On the 13th she had a short convulsive seizure; but, with the exception of occasional headaches, her recovery was uninterrupted though gradual. Only during the last week of January, for a couple of days, was there any serous discharge from the ear.

Dr. Kolb considers that, besides the symptoms pointing generally to cerebral mischief, there were special signs of thrombosis of the cerebral sinuses, for, in addition to the repeated rigors, there were the following symptoms:—1. Swelling over the right mastoid process, with remarkable fulness of one of the superficial veins; 2. The purely oedematous swelling of the trunk of the internal jugular vein and right temporal fossa of the forehead and both eyelids, and exophthalmos in the right side; 3. In both eyes intolerance of light, spasms of the eyelids, and obscured vision; 4. Hæmorrhage from the nose; 5. Other symptoms of embolisms in the cutaneous hæmorrhages over the loins, in the repeated attacks, which indicated hæmorrhages in the lungs (pain, spitting of blood, &c.) and the repeated rigors. The fact that the temperature was never elevated, was decidedly against meningitis of the summit of the brain. Gerhardt's symptom of imperfect filling of the internal jugular vein could not be observed, owing to the swelling of the surrounding parts. The rest of the paper is devoted to a consideration of the exact localisation of the thrombosis in the sinus, and a review of the case. The author thinks its happy termination shows that operative interference would have been superfluous. [The reporter, however,

cannot but think that a timely opening into the mastoid cells might have prevented the repeated relapses.—*Rep.*]

**SOMMERBRODT ON A LARGE FIBROMA OF THE LARYNX AS THE REAL CAUSE OF EPILEPTIC SEIZURES.**—Dr. Julius Sommerbrodt describes and figures the following case in No. 39 of the *Berliner Klinische Wochenschrift* for 1876 (September 25). The patient was a gentleman, aged 54, who said that, in 1867, he had been drenched to the skin. Ever since he had been somewhat hoarse, otherwise he was quite healthy. He sought advice for this in 1874. Laryngoscopy showed a large polypoid growth in the larynx. It was attached to the left true vocal cord, and lay over it, so that about four-tenths of an inch in length, and about one-fifth of an inch in breadth, was covered by it; but the posterior part of the vocal cord was not covered by it. It extended about halfway over the rima glottidis, and the remaining half of it reached the sacculus laryngis. The tumour was red and firm, its base was broad. The patient wished to postpone operations of any kind, but, in the winter of 1874-75, the hoarseness increased, and he had considerable dyspnoea.

From February 1875, with intervals of some weeks, and by preference at night, attacks of clonic spasms, with loss of consciousness, foaming at the mouth, biting of the tongue, etc., set in. After one of these in March, some paralysis of the left arm and leg, and, to some extent of the face also, was left behind. Gradually the fits became more frequent—often several would occur in one day. The dyspnoea increased. Bromide of potassium, ordered by Professor Biermer, was powerless to arrest the fits. There was no aura to be discovered. An operation to relieve the dyspnoea was determined on. The tumour was now much larger. Its weight caused it to sink deep into the rima glottidis, which it almost perfectly filled. Its shape was triangular. The right true vocal cord was quite free from it, and the left could also be seen for most of its length in spite of its connection with the tumour. The last fit was on September 10, and again, *as usual, after he had slept some time lying on his back.* After trying to snare it for several days successively, Dr. Sommerbrodt on the fifth day cut away a piece with a sickle-shaped and probe-pointed laryngeal knife. The next day (September 18) he was fortunate enough to be able (with his left hand, on account of the left sided position of the tumour) to cut away the whole tumour, which the patient coughed or spat out almost immediately. A minute fragment remained in the anterior part of the vocal cord. The bleeding was very slight.

The tumour, examined by Dr. Weigert, was a firm fibroma; it was one inch long, one-fourth of an inch in its greatest width, and one-third of an inch deep or thick. It fitted the glottis like a wedge, and had some papillomatous outgrowths at the end. The remaining fragment was removed by forceps. The operation was favourable in every way.

Five months after the operation, not only had there been no return of the tumour, but the patient had been and remained perfectly free from his epileptiform attacks. As many laryngeal tumours have been noted without epilepsy, we might hesitate to ascribe the fits to this, only that fifteen years before he had slight epileptiform seizures, which were ascribed to a cicatrix on the back of his hand. This was removed, and the fits ceased with its removal, until the growth of the fibroma of his larynx, or the epilepsia tho-



racica of Anthonst. The case is, therefore, one of sympathetic epilepsy.

W. BATHURST WOODMAN.

JANEWAY ON FRACTURE OF EXPLORING NEEDLE IN THE PLEURAL CAVITY.—At a recent meeting of the New York Pathological Society, the president, Dr. Janeway, referred to three cases in which the needle used for making an explorative puncture into the pleural cavity had been broken by the sudden movement of the patient as it was thrust in. One case occurred in his own service in Bellevue Hospital, one in Roosevelt Hospital, and one in Charity Hospital. In neither instance had the portion of needle left in the pleural sac given rise to unfavourable symptoms. The three cases came to his knowledge within one month, and showed the liability to an unpleasant accident, which had not occurred to him before, while performing this simple operation, and of which he had no recollection of having seen anything published. Dr. Robinson referred to a case in which the same accident occurred, but no unpleasant symptoms followed.

BAYNES ON SUPPRESSION OF THE SALIVARY SECRETION.—Dr. D. Baynes relates (*Canada Medical and Surgical Journal*, April 1877) the details of one of those rare cases occurring after an attack of acute tonsillitis. Both Stenson's and Wharton's ducts were found open on examination. The patient said that his tongue felt too large for his mouth, and that the latter seemed filled with tallow. He was continuously obliged to wash his mouth, or drink both night and day to prevent the choking sensation experienced from the dryness of the mucous membranes. After three weeks' ineffectual treatment by stimulating gargles and internal remedies, a copious flow of saliva was induced by passing for ten minutes the frequently reversed current of a twelve-celled zinc-carbon galvanic battery through the parotid gland, the negative pole being connected to a probe placed in Stenson's duct, while the positive was applied to the nape of the neck.

#### RECENT PAPERS.

On Pericardial Adhesions. By Dr. F. Tuzcek. (*Berliner Klinische Wochenschrift*, July 16.)  
On Unnatural Mobility of the Right Kidney, and its connection with Dilatation of the Stomach. By Dr. Müller Warnek. (*Ibid.*)  
The Point of Origin of so-called Bronchial Respiration. By Dr. Calvin Ellis. (*Boston Medical and Surgical Journal*, July 5.)  
An Interesting Case of Hydrophobia and a Question of Diagnosis. By Dr. M. Storrs. (*New York Medical Record*, July 7.)

#### SURGERY.

LANGENBUCH ON EXTIRPATION OF THE KIDNEY.—Dr. C. Langenbuch, of the Lazarus Hospital, Berlin, reports, in the *Berliner Klinische Wochenschrift*, No. 24, 1877, an interesting case of disease of the left kidney, treated successfully by extirpation of this organ. The patient was a healthy-looking, cheerful, and florid female, aged 32 years. During the eighteen months before the date of her admission under the care of the author, she had suffered much from attacks of dull and deeply seated pain in the left loin, and during the last three months of this period had been conscious of the existence of a tumour in this region. On examination, a very hard, smooth, and but slightly movable spherical tumour,

with a diameter of between six and eight centimetres, could be felt on forcible digital pressure on the left lumbar region. This swelling was diagnosed as a new growth seated in the posterior wall of the abdomen, and, as was indicated by its hardness and tenderness, and by the frequent spontaneous attacks of pain, one very probably of malignant character. Any idea as to the renal origin or connection of this growth was opposed by the clinical facts of the absence of cachectic phenomena and of the healthy condition of the urine. This fluid was normal in colour, and in specific gravity, presented no kind of sediment; and, so far as could be made out, had never contained blood or pus. No supposition as to the presence of any other form of renal tumour (cystoma, the very rare and always small sarcoma, an hydatid cyst, myoma) was entertained. The disease was confidently diagnosed as being a sarcomatous, myo-sarcomatous, or fibrous tumour on the left loin, having its origin in the connective tissue between or about the muscular bundles of this region.

In the operation performed for the removal of the disease, an incision was made through the skin from the last rib to the crest of the ilium, over the tumour, and parallel to and at a distance of six centimetres from the line of the vertebral spines. After separation of the layers of connective tissue and of muscles and exposure of the most prominent portion of the tumour, it was found that this adhered very intimately to the surrounding soft parts. It was found also that the disease extended much further beyond the surface than had been expected, and it was not until after very tedious and careful manipulation that the deep boundaries of the tumour could be reached. Here the growth was found to be continuous with a kind of pedicle, which was deligated and divided. After the removal of the growth, and during an examination of the extensive and deep wound, the ligature slipped away from the divided extremity of this pedicle; but, to the surprise of the operator, no hæmorrhage followed this accident. At the extremity of the stump of pedicle could be seen the wide and gaping orifice of a canal, along which a flexible probe could be passed inwards and downwards for a distance of twelve centimetres. During the operation for the removal of the tumour, in the later stages of which much more was effected by the operator's finger-nail than by any cutting instrument, there was but little hæmorrhage. The details of the antiseptic method were closely observed both during the operation and in the course of the after-treatment. The patient made a rapid recovery, and, it is reported, without any attack of surgical fever. The operation was performed on December 7, 1875, and early in the following month the patient was discharged from the hospital.

The removed mass was found on examination to consist of the left kidney, a considerable portion of which had been converted into tough fibrous tissue. This organ, so far as could be made out on microscopic observation, had evidently undergone a process of inflammatory induration, resulting in atrophy and removal of the glandular parenchyma. Whether this chronic inflammatory condition of the kidney was the cause or the result of the perinephritis, could not be determined.

The author discusses at some length the probable cause of the abnormal position of the diseased kidney, the inferior extremity of which was directed backwards between the fibres of the lumbar muscles, and reached almost to the integument. Such an ab-

normality in position might, it is suggested, be thus explained : some elements of foetal renal tissue, detached and displaced in the mass of lumbar muscles, may have formed there a third kidney furnished with a distinct pelvis, and a distinct set of vessels, and capable of forming and discharging urinary secretion ; this accessory organ, fixed in its muscular bed and constantly exposed to irritation, as from the compression and friction of clothes, may have undergone a slow and long-continued inflammatory process, until at last the attention of the patient was attracted to it in consequence of a supervening neuralgic affection set up through some unknown cause. This view, however, is rejected as being too hypothetical and fanciful. The author is rather disposed to consider the abnormal condition as an acquired one, and as the result of cicatricial contraction ; the chronic inflammation being thus regarded as the cause and not as the result of the displacement of the kidney.

It cannot be assumed, it is stated, that the primary inflammatory condition in this case was of the nature of a perinephritis, as such an affection is usually associated with some severe and well-marked disease of the kidney (pyelitis, pyelonephritis calculosa, renal abscess), no symptoms of which were ever observed in this case. The views as to a rheumatic or syphilitic origin of the chronic inflammatory induration of the structures of the affected loin, are also opposed by the absence of any symptom or trace indicative of either of those affections. It is suggested as a plausible explanation of the abnormal condition in this case, that a chronic inflammatory process had, through external influences, been excited and maintained in the soft parts of the loin between the skin and the left kidney, not that the inflammation had partly invaded the renal organ. It is suggested also that an abscess might have formed on the mass of lumbar muscles, and that this had reached and perforated the kidney, setting up further inflammation around this organ, the products of supuration being subsequently removed by absorption. Into the sac of this abscess the kidney might, it is thought, have been drawn through cicatricial contraction, rotation being at the same time effected in consequence of irregular deposition of the scar-tissue.

**RANKE ON THE TREATMENT OF IRREDUCIBLE LUXATION BY INCISION.**—The following case is recorded by Dr. H. R. Ranke (*Berliner Klinische Wochenschrift*, No. 25, 1877) for the purpose of supporting the view that it is justifiable in cases of irreducible luxation to expose under the antiseptic spray the seat of the injury, and, if necessary, to excise the injured joint. The patient was a workman, aged 52 years, who came under the care of Dr. Volkmann, with an irreducible perineal luxation of the head of the right femur, of two months' duration. No attempt had previously been made to replace the head of the bone. Dr. Volkmann tried on several occasions manipulation to reduce the luxation, but without success ; although the head of the femur could be moved from the perinaeum to the back of the ilium. The perineal luxation having been converted into an iliac luxation, the lower limb was then extended by weights, and kept at rest for six weeks. At the end of this period, as there was still much deformity, and the limb remained quite useless, it was decided to expose the joint with the view of removing any obstacle to reduction, or, this failing, of performing resection of the displaced portion of bone. The head and

neck of the right femur were well exposed by a long incision made, as in resection, over the great trochanter. No obstacle to reduction could be discovered. The tendons of the muscles passing to the great trochanter were then divided, but without any good result. The head of the femur remained fixed in its abnormal position, and could not, in spite of frequent attempts, be returned to its cavity. No proper capsule was observed, but the soft part immediately around the joint had become callous and indurated. After further dissection the head of the femur was so far isolated that it could, through adduction of the limb, be forced out from the wound. There was then found stretched over the acetabulum, and closely adherent to the margins of the cavity, a thick mass of muscle, the more superficial layers of which had undergone fibrous induration. As it was thus found useless to make any further attempt to replace the head of the femur in the acetabulum, Dr. Volkmann removed this portion of bone, together with the great trochanter. The operation was performed under the antiseptic spray, and the wound, after the removal of the displaced head of the femur, carefully washed out with carbolic acid solution, drained, and subsequently dressed with Lister's gauze. After the patient had been removed to his bed, the right lower limb was extended by a weight of ten pounds. The man made a rapid recovery, the wound healing by first intention, and with the absence both of local reaction and of surgical fever. After long continued extension by weights, there was found to be but little difference in the length of the right as compared with that of the left lower limb. Nine months after the operation, the patient was able to make very good use of the limb in locomotion. The direction of the foot was normal, and the movements, active as well as passive, of the lower limb at the hip could be performed with considerable freedom.

W. JOHNSON SMITH.

**HEATON AND DAVENPORT ON THE RADICAL CURE OF HERNIA.**—At a recent meeting of the Norfolk District Medical Society (*Boston Medical and Surgical Journal*, July 5), Dr. J. H. Davenport described in detail the method of treatment employed with success for many years by Dr. Heaton of Boston, designed to effect a radical cure of hernia.

The operations known as Gerdy's, Wutzer's, and Wood's were ineffectual, principally on account of the inflammation excited by the plug of adjacent integument, or of the invaginated scrotal tissues, or of both ; after a variable interval, in which apparent success had been obtained, the plug was got rid of by nature, and the rupture usually recurred. In Dr. Heaton's operation for radical cure, the first steps taken are to return the contents of the hernia, and, if possible, the sac itself, within the abdomen. If, as often happens, the hernial sac cannot be returned, it may remain in the canal without preventing a satisfactory result. Next, the right forefinger is invaginated in the scrotum and the external abdominal ring forced ; and, with the left forefinger pressed perpendicularly upon the integument, directly over the ring, the skin is forced with the finger directly into the ring, the spermatic cord and the sac, if in the way, being pushed aside, so that nothing might remain between the external pillar of the ring and the finger, except the integument and subjacent superficial fasciæ. The left forefinger being kept thus, the needle of the instrument (which resembles the ordinary subcutaneous syringe) is quickly introduced through the skin and superficial fascia, just passing



the external pillar, and entering the canal at once. The left forefinger is then removed, and the beak of the instrument insinuated further on, well into the canal, care being taken to avoid the spermatic cord and the fibrous walls of the canal. The beak of the instrument, when thus introduced, is in a suitable position for the injection of the liquid irritant, about ten minims of which is introduced drop by drop. The point of the needle should be well swept about while delivering the fluid; should pass around the exterior of the sac if unreduced, and should wet all the fibrous tissues.

After the withdrawal of the needle, which should be quickly done, the previous protrusion should not be allowed to descend, nor the patient be permitted to assume even the sitting position, until a suitable bandage or other means of support has been properly applied.

The irritant consists of Thayer's fluid extract of quercus alba, half an ounce; of the solid alcoholic extract of quercus alba, about fourteen grains. This is triturated with the aid of gentle heat for a long time in a mortar, until the solution is as perfect as possible. It is well to add to this mixture sulphate of morphia, in the proportion of about one grain to the ounce, in order to diminish the dull aching that follows the operation. A bandage is preferable to a truss after operating, because it can be more accurately adjusted, and can be worn with comfort while lying down. There is a dull pain in the groin following the operation; but, after attaining a moderate degree of acuteness, this subsides and disappears altogether in from six to twelve hours. After this there is no pain if the patient avoid exercise. No swelling appears, nor any local redness, nor any increase of temperature in the groin.

For the first week the patient is not allowed to sit up, as there is more or less tenderness during that time. During the second week moderate exercise in walking may be allowed, and after that time he can generally be allowed to return to his avocations. He usually advises his patients to wear the bandage until it is worn out, and then to discard all mechanical support. By this method he has been fortunate in obtaining a radical cure.

**TIFFANY ON CALCULI HAVING TEETH AS THE NUCLEUS.**—At a meeting of the Baltimore Clinical Society (*Maryland Medical Journal*, June 1877), Dr. Tiffany exhibited an interesting specimen of calculi, removed from the bladder of a woman 55 years old. Lithotripsy was performed. It being found exceedingly difficult to crush two pieces, after continued trial they were removed through the urethra, by distending it. Upon close examination, the pieces were discovered to be two well formed adult molar teeth. They had formed the nuclei of the calculi, but in what manner they had found their way into the bladder, Dr. Tiffany was unable to find.

**CROSBY ON THE AUTOMATIC REDUCTION OF DISLOCATION OF THE HIP-JOINT.**—At a meeting of the New York Academy of Medicine (*New York Medical Journal*, July), Dr. A. B. Crosby described a case of automatic reduction of the hip, which he accomplished by means of a method practised by Dr. Allen of Vermont. The method consisted in flexing both legs at right angles to the thighs, and both thighs at right angles to the abdomen. When in this position the operator, by means of hands placed beneath the knees, lifted the patient off the bed, and by gradually swinging him from side to side,

the dislocated head of the femur slipped into the acetabulum. Dr. Crosby said that Dr. Allen devised the method accidentally, in the following way. He was lifting a patient from one side of the bed to the other, and, while holding him until the clothing was arranged, the bone slipped into the acetabulum.

### RECENT PAPERS.

- The Cold Sound (Psychrophore); a Means of Treating Seminal Discharges, Chronic Gonorrhoea, etc. By Dr. W. Winternitz. (*Berliner Klin. Wochenschrift*, July 9.)  
 Plastic Splints in Surgery. By Dr. H. O. Marcy. (*Boston Medical and Surgical Journal* July 5.)  
 The Strumous Element in the Etiology of Joint-Disease: with an Analysis of 861 Cases. By Dr. V. P. Gibney. (*New York Medical Journal*, July 26.)  
 Notes on Surgical Practice among the Natives of Shanghai. By Dr. E. Henderson. (*Edinburgh Medical Journal*, August.)  
 Note on a Mode of Saving Blood in Great Operations. By Mr. J. Bell. (*Ibid.*)  
 Notes on a Case of Scirrhus in both Mammæ. By Dr. J. C. Stuart. (*Ibid.*)  
 On Salivary Calculi. By Dr. A. Feroci. (*Commentario Clinico di Pisa*, Nos. 3, 4, 5, 6.)

### MATERIA MEDICA AND THERAPEUTICS.

**WILLEMIN ON INSOMNIA AND ITS TREATMENT.**—In the numbers of the *Archives Générales de Médecine* for May and June, 1877, appears an article on this subject by the above author. There is no attempt at anything novel or original in the paper, but it consists of a careful compilation of the views of different writers on insomnia. The question is treated under three heads—1, the physiology of sleep; 2, the causes of insomnia; and 3, the treatment of insomnia. The general conclusions from the whole article are as follows.

1. Sleep is the result of a diminution of cerebral cell activity, induced by the fatigue or exhaustion following mental or bodily exertion. These physical conditions modify the vaso-motor system; the afflux of blood to the brain is reduced, and a condition of temporary anæmia takes place. The cerebral activity is thus diminished, and sleep follows, during which the nervous elements are repaired.

2. The cause of insomnia is a persistent abnormal activity of the cerebral nervous elements, due to some internal or external irritation. It may also be due to active congestion of the brain, which causes abnormal functional activity of its cellular substance.

3. Insomnia may also be the result of a peculiar nervous condition, associated with general anæmia, in which, owing to changes in the nervous elements, there is a modification in the circulation of the brain.

4. In the treatment of insomnia, it is important to first ascertain its cause. Slight cases are usually successfully treated by general hygienic measures.

5. Insomnia occurring during acute or chronic maladies cannot, as a rule, be rapidly relieved. Therefore, while waiting the recovery of the disease, the symptom is to be treated with hypnotics, at the head of which is opium and its alkaloids.

6. Morphia is the most somniferous principle of opium. Narcein and codeine, although less active in this respect, leave fewer traces of headache and malaise. Opium preparations are more particularly useful in insomnia associated with pain. They are contra-indicated when there exists any cerebral congestion.

7. Bromide of potassium has a much less powerful

hypnotic action than opium. Its use is indicated in those cases due to excitement of the cerebral circulation, in which opiates are useless and injurious. It has been employed successfully as a calmative in children. It is contra-indicated in cases of marked anæmia.

8. Sulphate of quinine, like the bromide, appears to exercise the action of relieving the congestion of the cerebral nervous elements.

9. Hydrate of chloral is an excellent hypnotic in almost all cases of insomnia, but it is to be given with caution to persons suffering from dyspnœa, cardiac affections, or great debility.

10. The insomnia of old persons or patients suffering from great debility or anæmia is sometimes successfully treated by tonics, stimulants, and hydro-pathy.

A. HUGHES BENNETT, M.D.

RIDDELL ON THE TREATMENT OF SCALDS AND BURNS.—Dr. Riddell (*Medical and Surgical Reporter*, January 5) used the following compound in a case of severe scald from boiling water.

R. Hydrate of chloral ... ʒiij.  
Carron oil ..... ʒvj.

This mixture was applied by means of cotton fitted as a mask to the face, allowing spaces only for the mouth and eyes. Within a minute or two only the sharp stinging sensation at first experienced was followed by a rapid diminution of pain. This latter was also associated with drowsiness. The patient rapidly improved.

SALTS OF BISMUTH.—Some salts of bismuth, more especially the nitrate and carbonate, have recently come into favour, and been prescribed by medical men for certain disorders of the system (*Ann. Pharm.*, ser. 3, vol. x). It has been remarked in several cases in England that persons to whom either of these preparations had been administered were affected in an accountable way, the breath and skin acquiring an intolerable odour. It appeared at first sight probable that the cause lay in the presence of arsenic in the bismuth, but analysis of the salts has shown them to be contaminated with tellurium. Tetradymite, a compound of bismuth and tellurium, is a mineral which has been met with in many localities, and may easily have caused the contamination of the crude metal.

NUSSBAUM'S NARCOSIS.—The peculiar state, called Nussbaum's narcosis, produced by the subcutaneous administration of a few centigrammes of morphia, about fifteen minutes previous to placing a patient under the influence of chloroform, has already been known for some time, and made use of with great benefit during operations in the mouth or in the fauces, as the full anæsthetic effects of the chloroform are preserved while the loss of consciousness is by no means complete. Still better results have been obtained (*Neues Repertorium der Pharm.*, 1876) by substituting a subcutaneous injection of a few centigrammes of muriate of narceine for the morphia. The hypodermic solution is best made as follows: 4½ grains of muriate of narceine are mixed with 310 grains of distilled water in a flint or test-tube; the latter is placed in a water-bath and heated until the salt is dissolved.

AN OINTMENT TO ALLAY ITCHING.—Dr. L. D. Bulkeley (*Transactions of the American Medical Association*, in *Boston Medical and Surgical Jour-*

*nal*, June 21) uses the following ointment to allay itching:

R. Pulv. gummi camphoræ  
Chloral hydrat. . . . . āā ʒj  
Unguenti aquæ rosæ . . . . . ʒj M.

The chloral and camphor are to be carefully rubbed together till a fluid results, and then the ointment is to be added slowly and well mixed.

It does not answer when the skin is at all broken; the burning sensation caused on its first application lasts but a few moments, while the relief lasts for hours, or even the whole day.

TWEEDIE ON GELSEMIN.—In the *Lancet* of June 9, Mr. John Tweedie calls attention to the action of gelsemina on the pupil, the ocular muscles, and on accommodation. He says, "The importance which is now very properly attached to correction of anomalies of refraction, and especially abnormal regular astigmatism, necessitates the frequent and almost constant use of atropine to overcome the power of the accommodation for near objects. But against atropine there has always been the serious objection that its effects last so long that great inconvenience arises to the patient from being unable to do near work for several days after the error of refraction has been estimated. If the pharmacopœial solution of sulphate of atropine has been employed, at least eight to twelve days must elapse before the accommodation returns to its normal state. With gelsemina, on the other hand, sufficient accommodation returns within ten to fifteen hours to enable a person to read newspaper type at twelve inches, and within thirty hours the accommodation will have practically returned, although the pupil may remain somewhat dilated, though not quite immobile, for several days. The mistiness and confusion of vision when the eye is fully under the influence of gelsemina is nothing like so great as when atropine has been used.

"Practically, it may be stated that gelsemina locally applied readily dilates the pupil, and, when used of sufficient strength, temporarily overcomes the accommodation. It is preferable to atropine in cases where the power of accommodation is not great, where it is necessary to overcome the accommodation for a short time only for the purpose of estimating the degree of ametropia, because its effects are more transient and the confusion of vision during its action is less. To insure paralysis of accommodation within three hours, a solution of at least eight grains to the ounce must be used every fifteen minutes for the first hour, and every half hour afterwards."

WINDELSCHMIDT ON THE ACTION OF BUTYL-CHLORAL.—H. Windelschmidt (*Centralblatt für Chirurgie*, No. 14, 1877) confirms Liebreich's observations regarding the pharmacodynamic peculiarities of butyl-chloral. Its effect upon rabbits is hypnotic in small doses; in larger quantity it acts as an anæsthetic, the anæsthesia beginning at the head and extending downwards until the whole system is deeply narcotised. Minimal doses increase the frequency of respiration; small doses diminish it; large doses are followed by respiratory paralysis. Small doses do not alter the pulse-rate; even larger doses affect this only slightly, compared with the change in respiration. Small doses, up to 0.3 grain, injected hypodermically, increase the rate of both pulse and respiration, particularly the latter. Doses of 0.6 grain cause the respiration to decrease greatly in



frequency, while the pulse remains unaltered. Larger doses (1.2 grain) reduce the pulse to one-half, the respiration to one-fourth its normal rate. A dose of 15 grains causes profound narcosis accompanied by general anæsthesia. The temperature rises at first, but later sinks decidedly.

**LANJARROIS ON THE ANTISEPTIC PROPERTIES OF BICHROMATE OF POTASSIUM.**—M. Lanjarrois (*Le Mouvement Méd.*, 1877) has found that the addition to water of one per cent. of bichromate of potassium will prevent the formation of vegetable organisms, even when the solution is exposed to the open air. Meats, urine, gelatine, etc., are all preserved intact. The addition of  $\frac{1}{1000}$  part of bichromate to beer prevents its turning sour. A piece of meat preserved in an aqueous solution of bichromate during three months presented the appearance of gutta-serena. Contrary to what is observed regarding meat preserved in fuchsine, dogs refused to eat meat thus preserved.

**ORTILLE ON HYPODERMIC INJECTION OF ETHER.**—Dr. Ortille (*Bull. Gén. de Thérap.*, 1877), being called to see a child of 12 who had injured her head by a fall, found her unconscious, with the pulse small and irregular; no bleeding at the nose; the jaws were tightly closed, the pupils strongly contracted. He injected 25 minims of ether under the skin of the sternal region, which caused a swelling of the size of a pigeon's egg. This he gently manipulated until it was entirely absorbed. Within five or six minutes the pulse returned and the pupils became dilated. A few teaspoonfuls of brandy were given, and, in a couple of hours, the child was conscious. No discomfort ensued from the injection. In similar cases the pupil is the guide, but the injections of ether should not be continued if the temperature rises. Cerebral anæmia is the condition which calls for this treatment.

**BAYLES ON NITRITE OF AMYL IN WHOOPING-COUGH.**—At the recent meeting of the Medical Society of the State of New York (*New York Medical Record*, June 30) Dr. George Bayles of New York read a paper, in which he considered the beneficial influence arising from the use of amyl-nitrite in the treatment of whooping-cough, and reported several cases. The drug was administered in doses of from one to three minims, and repeated every two, three, or four hours, according to age of child, and urgency of symptoms. No antagonism existed between the remedy and quinine. Quinine was administered in most of Dr. Bayles's cases prior to the use of amyl. It was regarded as a safe remedy when used properly, and one of more than ordinary value in the treatment of the affections to which special reference was made. It was regarded as specially adapted to the treatment of spasmodic affections and for breaking up the habit of such diseases.

**ORTILLE ON THE HYPODERMIC INJECTION OF CHLORIDE OF PILOCARPIN.**—Among the inconveniences accompanying the use of jaborandi, vomiting is most annoying, the medicine being thrown up very frequently before its influence begins to be shown on the salivary or sudoriferous glands. Dr. Ortille (*Bulletin Génér. de Thérap.*, and *Phil. Medical Times*, June 23) suggests the hypodermic use of chloride of pilocarpin in the dose of .025 gramme (one-third of a grain) to .03 gramme (one-half grain) in 1 gramme (15 minims) of distilled water. Dr.

Orville has invariably obtained prompt salivation and abundant diaphoresis by this means without any inflammation having followed at the point of injection.

#### RECENT PAPERS.

Solution of Albuminate of Iron. By Dr. Friese. (*Berliner Klin. Wochenschrift*, July 16 and 23.)  
Mercury in Syphilis. By Dr. J. Duncan. (*Edinburgh Medical Journal*, August.)

### OPHTHALMOLOGY AND OTOLOGY.

**ROOSA ON COCHLITIS.**—In the *New York Medical Record* for November 1876, is an interesting paper by Dr. St. John Roosa, on syphilis of the cochlea. After premising that the clinical investigation of recent cases will aid us very much in determining how to distinguish diseases of the labyrinth from those of the middle ear, and perhaps to go a step further and locate them in the vestibule, semicircular canals, or cochlea, the author proceeds to tabulate the symptoms which may be somewhat relied on in making a diagnosis of disease of the cochlea and of other parts of the labyrinth.

1. Disease of the cochlea, as of the other parts of the labyrinth, usually, though not always, manifests itself suddenly. The patient can definitely fix upon a time when he became deaf, and when he began to have tinnitus aurium. Sudden loss of hearing and sudden occurrence of tinnitus, vertigo, and staggering are not, however, peculiar to labyrinth diseases, as we may have the same symptoms in cases of inspissated cerumen and catarrh of the middle ear. They are, therefore, only of pathognomonic value in connection with the objective examination and tests.

2. The tuning-fork is usually heard better, or only, in the sound or better ear.

3. Examination of the membrana tympani and the rest of the methods for inflating the middle ear will usually give us reasonable conclusions as to the situation of a given disease of the ear, so that at least we may exclude collections of fluid in the tympanic cavity in making a differential diagnosis between disease of the middle ear and of the labyrinth.

4. The piano, or any very similar musical instrument, will aid us in determining whether or not disease of the cochlea exists. The examination of cases that were unquestionably affections of the labyrinth shows that the power of appreciating low tones is the last to suffer and the first to recover in most cases of disease of this part of the ear, so that these will be heard when the high ones are not heard at all, or, if they are appreciated, appear "false" or doubled. From our present knowledge of the physiology of hearing, where these symptoms are present, we must conclude that the cochlea is the seat of the disease, even if it be secondarily affected.

5. The diagnosis of syphilis of the labyrinth depends in a great measure upon the history and the presence of other symptoms, as eruption, mucous patches, etc.

The occurrence of disease of the labyrinth in a person who has probably had the initial lesion of syphilis, even if no other symptoms are present, is a very suspicious circumstance, which should lead to a careful weighing of the indications for and against a mercurial treatment.

"I prefer to say disease of the cochlea, instead of disease of the labyrinth, where the prominent symptoms, as in the cases now reported, are great impairment of hearing, the inability to hear certain tones, and the production of false ones. These are evidences, I think, of cochlear disease, whatever else we may have. Tinnitus is a symptom common to many forms of aural affections, while vertigo and unsteadiness of gait are chiefly to be referred to undue pressure from the base of the stapes upon the semicircular canals, and not to disease of the cochlea. I think too much stress has been laid upon increased pressure upon this latter-named part of the ear, to the neglect of disease having its origin in the tone-perceiving apparatus—the cochlea. 'Ménière's disease' has always seemed to me an unfortunate name, since it has been indiscriminately applied. It ought not to be used unless it refers to a case such as that in which a hæmorrhage into the semicircular canals was found. Of late, cases in which the cochlear symptoms are at least the predominant ones are sometimes styled cases of 'Ménière's disease', where they have very little in common with cases of hæmorrhage. In short, I think we should, in making a diagnosis, begin to localise the part of the ear that is chiefly affected. It is interesting to notice that we are always assisted in a diagnosis of supposed cochlear disease if the patient have a musical education. I believe all the cases of double hearing which have been reported occurred in musicians. Certainly, other patients have had the same symptoms, but they have been unable to appreciate them."

Dr. Roosa then proceeds to narrate four cases in which the above-described symptoms were present and appeared to be due to syphilis, and thus concludes the paper.

"It is undoubtedly true that affections occur in syphilitic patients (from suppression of the perspiration, for example) which would have occurred all the same had they not been syphilitic; and yet, the exposure or imprudence having once caused the attack of inflammation, it immediately assumes the character of a syphilitic affection by reason of the syphilitic blood, whose increased flow to the part and the exudation go to constitute the inflammation. The complete failure of the antiscarrhal treatment, although all these patients showed some catarrhal symptoms, was another striking evidence of the real nature of the cases; for we seldom meet with cases of catarrh that do not respond to some extent to the use of the catheter, Politzer's method, etc., while in acute or subacute labyrinth cases this treatment often aggravates the symptoms.

"We do not know as yet what part of the cochlea corresponds to the low, and what part to the high notes of a musical instrument; but we do know, as has been intimated in a previous part of this article, from what has been seen of diseases of the labyrinth—not only in such cases as those just given, but in those resulting from cerebro-spinal meningitis—that the parts tuned for low tones suffer less than the others. The former will remain unhurt, or at least with a certain power of perceiving sound, when the latter have no power at all. I have now a patient under observation, however, who seems to have labyrinth disease secondary to a catarrhal affection of the middle ears, who presents some symptoms that seem to contradict this view. With the right ear, the one in which I think the nerve is diseased, he can hear the high notes of a piano better than the low ones; in walking on the sea-shore, he hears the crickets in the grass, but not the roar of the waves;

he can hear the chirping of insects and the movements of their bodies easily; the tick of a watch is heard normally at  $\frac{4}{5}$ , and yet he cannot hear the tones of the human voice at all well. With the left ear, whose hearing distance with the watch is but  $\frac{4}{10}$ , the power of hearing conversation is so good that the patient, a young man of seventeen, carries on his studies at college with no particular difficulty.

"These clinical facts may yet be fully explained by the physicist working with musical instruments; at least, as soon as the pathologist has determined the exact nature of the diseases of the cochlea."

W. DOUGLAS HEMMING.

FEUER ON ULCERATION OF THE CORNEA AFTER DIVISION OF THE TRIFACIAL NERVE.—Dr. N. Feuer (in the *Sitzungsberichte der Kaiserliche Akademie*, June and July 1876) has a paper on the causes of keratitis after section of the trigeminal nerve. He concludes, from a series of experiments, that division of the trifacial nerve has no direct harmful effect on the nutrition of the cornea. He thinks the subsequent ulceration to be due to the want of movement in the lids, which follow the division of the nerve, giving rise to the drying of the cornea, with mummification and necrosis of its substance, in that part which is most exposed in the slit between the lids. He further states that the protection afforded by a covering of wire-gauze is due to the manner of its application, and that it only acts when it presses the lids together in such a way as to considerably reduce the size of the slit between them. The diminished flow of the lachrymal secretion assists in the result, but is not sufficient in itself to give rise to the ulceration which supervenes. B. THOMPSON LOWNE.

#### RECENT PAPERS.

A Foreign Body in the Middle Ear, with Uninjured Membrana Tympani: with Remarks on the Naso-Pharyngeal Douche. By Dr. Schalle. (*Berliner Klin. Wochenschrift*, July 30.)  
On Iridectomy and Sclerotomy in Glaucoma. By Dr. L. Mauthner. (*Wiener Medizin. Wochenschrift*, July 7, 14, 21, and 28.)

#### PSYCHOLOGY.

ERLENMEYER ON THE ACTUAL INCREASE OF MENTAL DISEASES.—During the last few years, the number of the insane in asylums has increased to an alarming extent. The public are aware of this, and are seriously uneasy, demanding that some remedy shall be applied to arrest the rapid increase.

In 1835, the statistics of the establishments in France showed 10,525 insane: 20 years later that number had increased to 24,869, or more than doubled; and, 14 years later, on January 1, 1869, it had reached 38,545. Thus, the number of the insane in asylums has nearly quadrupled in 34 years.

How sad is the condition of the Netherlands. On January 1, 1844, the establishments there sheltered 837 patients. On Jan. 1, 1869, or 25 years later, they contained 3,357 patients; that is to say, the numbers had more than quadrupled. The disease was more manifested amongst females. In England, there were on January 1, 1844, 11,272 lunatics, and, on January 1, 1868, 32,605; thus, in 24 years, the number had trebled.

Germany is no exception, although without a report. Although we have not the statistics of all the German States, yet the statistical tables of Prussia,



at the time of its absorption into the Empire—when, indeed, it was at the height of prosperity—show that mental diseases had attained a high level. In 1867, there were 37,960 lunatics, and, four years afterwards, in 1871, the number had reached 55,043; that is, an increase of 17,083 in four years.

To stay this plague which is upon us, there have not been wanting panaceas. A number of philanthropic writers have aimed at prevention as a means of diminishing the cases of mental disease, and of suicide, which are intimately connected with it. I do not intend to submit these plans to a scientific examination; but, upon the strength of a long professional experience, I shall indicate a means of relief which is at present particularly salutary. It is of little use talking about the means of disposing of the insane, or trying to cut down the number by classification; the true remedy will be found in attacking the disease itself in its early stage, and not, as at present, when it is fully developed.

Before all things, it is necessary to increase, multiply, and ameliorate the establishments for the insane, and to obtain a greater certainty of early admission, and thereby assure a more certain recovery. It is a little startling to find that in Prussia there are only 26 asylums which accommodate only one-fourth of the insane; it is, therefore, not possible to receive all the recent and curable cases.

Amongst the indispensable ameliorations required, I should advise a liberal treatment by the Central Government, so that a family or commune may not, on the ground of expense, retard or oppose the speedy admission of cases. Another improvement very urgently needed, is the removal of chronic cases to cottages, or to an agricultural colony. The establishments thus would be able to receive the acute cases, and the regular occupation found in the colonies would render possible the cure of the "incurable".

I desire to see everywhere established asylums for the treatment of the disease in its very early periods, where patients should be able to obtain admission without being certified insane by two doctors, being admitted according to their need, as in other hospitals for bodily diseases. For one who feels his mind disturbed, and desires to be delivered from his mental trouble, such admission I believe to be legitimate.

During the last few years, the asylum accommodation has been so inadequate to the demand, that patients in the early stages of their disease have been obliged to resort to the *Maison de Santé* and hydropathic establishments. Houses have also been opened under the name of "establishments for the treatment of nervous diseases", and, where specially administered, excellent results have followed. In the face of the present pressure, it is desirable that more of these establishments should be augmented, and especially those where the disease may receive early treatment, with a corresponding chance of early cure.

REIMER ON THE PROGRESS IN THE DEVELOPMENT OF COLONIES FOR THE INSANE.—After remarking that, without a personal visit and some labour, no physician is entitled to give an opinion upon the value of the system of colonisation in the care and treatment of the insane, Dr. Reimer (*Deutsche Medicinische Wochenschrift*, No. 4, 1876) proceeds to give an account of several of these colonies.

He remarks of the colony of Fitz James, near

Clermont, that Auguste Labette, in his work upon it, has not advanced anything which the visitor is unable to verify, and that whatever may be the opinion of observers with regard to Gheel, there has been but one opinion with regard to Clermont. It has been said of Clermont, that "the methods of a strange country cannot be adapted for Germany." We are, however, in a position to reply to this by bringing forward practical results acquired upon German soil; and if they are not so good as those obtained in the French colony, yet they are sufficiently good to encourage all friends of this cause. In this matter, the Governments of small States have cleared the way.

On April 1, 1864, the colony of Einum, attached to the Hanoverian Hospital for the Insane, at Hildesheim, was opened. It is situated half a mile distant from the parent establishment, and contains 45 patients, or 11 per cent. of the 400 male patients of the hospital; but, as about the same number of patients is indispensable for the work of the fields and gardens of the hospital, we must put the number at 22 per cent. of free labourers. The Director Snell believes, and contends with reason, that attempts of this kind will lead to the introduction of more liberty in the treatment of the insane. The colony possesses a quantity of stock, and grows good wheat. The monetary aspect of the colony has undergone amelioration. Since the year 1868 it has had a balance of 2,000 thalers; but the most essential matter by the influence of this mode of life upon the patients is eminently favourable, according to Snell. He said that, "the ideas of order and activity are stimulated by the active life of an agricultural colony, and amongst a greater number of the insane a more or less ardent interest is excited in the prosperity of the colony". This "activity" pales the illusionary thoughts and sad sensations which affect many. The patient lives at full liberty in the colony.

Attached to the Saxon Hospital at Colditz is the colony of Zschadras. Here the conditions are more favourable. The colony is only 20 minutes' walk from the mother establishment, which contains more than 800 male patients. The number of colonists may safely be calculated at 10 per cent. of the total number of patients in the parent establishments; but in 1871 it rose to 10.08, in 1872 to 16.48, and, finally, in 1874, to 26.39, that is to say, more than one-fourth of the total number. The financial results were also more satisfactory than at Einum, as may be seen by reference to the report of Dr. Voppel; but we may mention here, that the interest upon the capital amounts to 7 per cent. After a time, the aptitude of the individual for work is so evident, that the farmers of the neighbourhood recognise it. The general state of the patients is improved, the demented, maladroit in appearance, who, when in the establishment, were plunged in hebétude and resisted all excitement, become useful members of the colony.

All friends of the insane will welcome the experiences of Einum and of Zschadras. Surely the calculation that 5 or 10 per cent. of the colonists are capable of free treatment, and the additional fact that these colonies are a pecuniary success, will lead to some alteration in the mode of treatment of the insane.

A *résumé* of the results obtained up to the present time in Germany confirms upon all points the experience of the brothers Labette. The colony of St. James is situated two kilomètres from Clermont; it receives both sexes, is divided into four sections

and occupied by 400 patients. No restraint or form of punishment is permitted. The Communes pay one franc per day for each man, and 0.96 centimes per day for each female; and, as the brothers Labette are satisfied, the authorities are saved the expense of costly buildings. Any establishment wishing for the advantages of Clermont must follow these conditions:

1. It must have an establishment which will receive recent cases, the excited, the rebellious, and the infirm.

2. It must offer its patients workshops, with occasion for all kinds of occupation.

3. It must possess a farm for agricultural work, capable of receiving a fluctuating population of 25 or 30 per cent. of the total number received.

After some strong remarks upon a paper read by the Director of the Asylum at the Psychological Reunion held in Berlin, June 15th, 1876, on "Is not an exaggerated humanity in the treatment of the insane prejudicial?" the author contrasts the life of an insane person in a colony and the life of such a person in an asylum where the old rigorous treatment should be in force, and demands to know which type of treatment Government authorities, medical men, and the public, would prefer.

[The agricultural colonies here described exist in the farms attached to every county asylum in this country. The establishment at Clermont would seem to be formed upon the model of a well-arranged county asylum in this country.—*Rep.*]

CHARLES ALDRIDGE, M.D.

**TUKE ON THE DIAGNOSIS OF GENERAL PARALYSIS OF THE INSANE.**—Dr. Batty Tuke (*Edinburgh Medical Journal*, April 1877) relates a case in which, although the phenomena of mental exaltation, defective articulation, and impaired locomotion were present, the patient recovered and remained well three years, the ophthalmic appearances of general paralysis were absent; in another identical case, recovery took place in six months and has been maintained. In both these cases, the attacks occurred synchronously with outbursts of drinking. The author is of opinion, that chronic alcoholism not unfrequently simulates general paralysis, and makes it impossible to pronounce a definite diagnosis; defective articulation, optimism, and impaired co-ordination being present in both. The presence or absence of sensory paralysis may help, as Russell Reynolds has shown that it is liable to occur in advanced cases of alcoholism; but Dr. Tuke does not consider it quite trustworthy, as he has found much diminution of reflex action in general paralysis, although, as a rule, this is unimpaired in the earlier stages. The most important indications are afforded by the pupil and retina. "If, after careful weighing of the history and symptoms of a suspected incipient case, we find contracted or irregular pupils, and, on ophthalmoscopic examination, hyperæmia of the retina, the weight of evidence leans towards general paralysis." In chronic alcoholism, hyperæmia of the retina has been observed, but improves rapidly on the withdrawal of stimulants. Leber's colour-test for *amblyopia sine materiâ* may be employed. The patient is made to gaze intently at a black spot marked on a sheet of paper, and held a foot from the eye, and to move a coloured disc at distances varying from half an inch to three inches from the spot. He must state the variations in colour produced by these changes of position. A red disc looks blackish or greyish at the centre of the field of vision, and yellow at the periphery; green discs appear yellow; blue and

yellow are distinguished. In two cases of chronic alcoholism the results obtained were as stated by Leber; in two fairly intelligent general paralytics, the disc looked dark in the centre, and lighter towards the circumference of the visual area. There is no pathognomonic symptom. When we have impaired reflex action, regular and normally sized pupils, and transient hyperæmia of the retina, we may diagnose alcoholism; when converse conditions exist, general paralysis of the insane. The colour-test may serve to confirm the diagnosis.

ROBERT SAUNDY, M.D.

**BONFIGLI ON DIARRHŒA IN THE INSANE.**—Dr. Bonfigli (*Journal of Mental Science*, Jan. 1877) ascribes the diarrhœa, which often accompanies insanity and chronic nervous disorders, to paresis of the vaso-motor nerves in the intestinal mucous membrane. From this theoretical view he was led to administer chlorate of potash, which, according to Sasse, acts by increasing vaso-motor contraction. He has found it very successful, provided it be given in larger doses than usual, and continued for some time after its good effects have been produced.

#### RECENT PAPERS.

A Case of Microcephalism. By Dr. Bertelsmann. (*Berliner Klinische Wochenschrift*, May 7.)

The Treatment of General Progressive Paralysis. By Dr. L. Meyer. (*Berliner Klinische Wochenschrift*, May 21.)

A New Theory of Trance. By Dr. George M. Beard. (*The Journal of Nervous and Mental Disease*, Jan. 1877.)

#### REPORTS OF FOREIGN SOCIETIES.

##### IMPERIAL ROYAL MEDICAL SOCIETY OF VIENNA.

May 11. *Lupus of the Larynx.*—Dr. Grossmann showed a patient who had lupus of the larynx. This organ is rarely the seat of this disease, and the number of cases hitherto recorded is very small. It is evident that, before the laryngoscope came into use, the diagnosis of lupus of the larynx could only be made on the *post mortem* table; but the rarity of this pathological process is indicated by the circumstance that it is either passed over altogether, or very briefly referred to in surgical writings. The present case is further interesting, inasmuch as the symptoms were so distinctly marked, that it may throw light on the diagnosis of similar cases. It further affords some points of importance in differential diagnosis. In 1859, Türck made the first diagnosis of a case of lupus of the larynx, and showed it to the Society. He afterwards had the opportunity of drawing three cases, which he described in the *Klinik für Kehlkopfkrankheiten*. To these he added a fifth case, which, however, he regarded as doubtful. More recently, Ziemssen has published a case. Of these six cases, five occurred in females and only one in a man. The females were aged from 9 to 15; the man was 45 years old. The present patient had been previously shown to the Society by Dr. Neumann, on account of lupus of the conjunctiva. Although essential changes had already taken place in the larynx, his voice was almost unaffected. On the epiglottis, a cordiform loss of substance was observed, as in the cases de-



scribed by Türk; the left true and false vocal cords were involved in the disease, which extended also to the right vocal cord and below the left cords. The function of the vocal cords in speaking and breathing was unimpaired. Dr. Grossmann commented on the differential diagnosis between lupus, polypoid growths, cancer, and syphilis of the larynx, directing special attention to the absence of disturbance of motility in the vocal cords in his case. As regards treatment, he was of opinion that the remedies employed against lupus in other parts of the body were indicated here.

*Cysticercus of the Tongue.*—Dr. Hofmokl showed a boy from whose tongue he had removed a cyst, which, on close examination, was found to be a *cysticercus cellulosa*. No swellings of the kind could be found in the skin or muscles.

*A Case of Progressive Muscular Atrophy.*—Dr. N. Weiss related the case of a young man, aged 17, who had suffered for two years from symptoms of muscular atrophy. These commenced with a feeling of weakness in the left arm, especially on raising it. The same condition soon appeared in the right arm; and, at the same time, a change in the position of the scapulæ and distortion of the spine were observed. Some weeks later, the patient had a feeling of weakness in the right hand, with inability to extend it. For six months, the patient had complained of weakness in the left leg. He was admitted into the electro-therapeutic department of the General Hospital on January 18, when his condition was as follows. He was of middle size, of feeble conformation, and fairly well nourished. Examination of the internal organs revealed no essential change. The muscular structures of the upper limbs were universally atrophied, especially the extensors of the right hand, the muscles of the right arm, and both deltoids. A similar atrophic condition was shown by the muscles of the shoulder-girdle, especially the serratus anticus major and the rhomboides, superior and inferior. In consequence, the scapulæ stood out like wings, being in some parts nearly three inches from the trunk; at the same time, they were so drawn upwards and outwards by the antagonists of the paralysed muscles, the trapezius and levator scapulæ, that the upper and inner angle of the scapula could be felt close under the middle of the clavicle. The posterior cervical muscles were much emaciated; the cervical spine was in a state of cyphosis, which was compensated by a lordosis of the lumbar region. The pectoral muscles were reduced to a third of their normal size; and the thorax was compressed above and expanded below. The muscles of the left thigh, especially the quadriceps exterior, were also atrophied. The functional power of the diseased muscles was everywhere reduced, and in some, as the extensors of the right hand, the deltoids, and the muscles fixing the scapula, was almost entirely absent. The electro-muscular irritability of the muscles was not greatly changed; but, in the extensors of the right hand, strong faradic currents produced no contraction, and strong galvanic currents only with difficulty. Fibrillar contractions appeared neither spontaneously nor on irritation. No disturbances of common or special sensation were observed. An analysis of the urine was made in Professor Ludwig's laboratory. The quantity excreted in 24 hours contained  $1\frac{1}{2}$  grain of kreatinin, being only one-twelfth of the normal quantity, which, according to the numerous analyses of Neubauer and Hoffmann, is about 15 grains. This diminution of the kreatinin, a general product of

muscular tissue-change, would indicate a serious disturbance of the vital processes in the muscular system.—Professor Rosenthal remarked that he had directed attention to the reduction of kreatinin in the urine in persons affected with progressive muscular atrophy. Connected with it was the remarkable lowering of the body-temperature which was constantly observed. He related a case of paralysis of the serratus on one side from injury of the posterior long thoracic nerve, which recovered under the continued use of the faradic current.

*The Mechanism of Retention of Urine.*—Dr. Jurié, junior, recognised three causes of retention of urine. It was produced most frequently in old men by simple hypertrophy of the prostate. In these cases, the resistance of the prostate was increased, and the longitudinal muscles of the bladder acted at a disadvantage. Another cause of retention in old men which Dr. Jurié recognised was irritation of the sphincter vesicae, which, originally a reflex result of pyelitis and of affections of the rectum, might become habitual. Finally, the rarest cause was enlargement of a lobe of the prostate. The paper was illustrated by drawings and preparations.

*Instrument for Operations in the Naso-Pharyngeal Space.*—Dr. Karl Störk showed a snare devised by him for operations on the naso-pharyngeal space.

*Gelatine Preparations.*—Herr Grohs, apothecary in Vienna, showed a series of preparations in gelatine, which had been employed in hospital and private practice and found very useful. The principal of these were the following. Gelatine almonds, containing in their interior various medicines, such as fresh kousso, quinine, etc. As the taste of the medicine was completely disguised, these almonds were especially useful in the case of children, being almost involuntarily swallowed. Suppositories of gelatine charged according to the demands of the case with morphia, extract of opium, or aloes. These melted easily, but less quickly than those made of cacao-butter. Vaginal capsules of gelatine, intended as substitutes for injections, and containing astringents, either alone or with other remedies; after introduction into the vagina, they were retained by a plug. Urethral and nasal gelatine bougies. The former contained zinc, tannin, sulphate of copper, etc.; the latter nitrate of silver, salicylic acid, carbolic acid, or astringents. Globules containing each four drops of nitrite of amyl, to be inhaled after puncturing the globules. Dr. Jurié said that the gelatine suppositories were very useful, but that the urethral bougies did not completely dissolve.—Dr. Schrötter had found the amyl-capsules of great practical value; and also the quinine almonds in the treatment of children.—Dr. Störk had used the nasal bougies frequently with good result. He recommended them especially in cases where (as often happened) injections into the naso-pharyngeal space could not be borne on account of their liability to pass into the Eustachian tube and set up catarrh, otitis, etc.

June 1. *The Treatment of Varix.*—Dr. Weinlechner spoke of the radical cure of phlebectasis. In sixteen patients with varix of the lower limbs, he had injected three drops of a two-per-cent. solution of chloride of iron. The vessel operated on was generally the vena saphena magna. The immediate effects of the injection were pain, and induration consequent on coagulation and on contraction of the venous trunk. There was never any hæmorrhage. The compressing strips of adhesive plaster were removed after the operation; and the patient, after

remaining two hours in the operation-room, was taken to bed. The pain lasted two or three hours. In some cases, scabbing and abscess took place, and in many there was purulent infiltration of the skin when some of the perchloride of iron accidentally escaped into the subcutaneous areolar tissue. Of the sixteen patients, ten underwent one operation; four were operated on twice, one three times, and one four times. There were no deaths; nor did phlebitis occur in any case. The swelling of the limbs and the sweating of the feet diminished rapidly, any ulcers that had been present healed, and the improvement still continued at the end of several months. Dr. Weinlechner had also tried Schede's method of compression in varicocele and in varicosities of the leg, but without sufficiently good result. Hence he preferred injection to compression. The latter, however, might succeed better if the ligatures were left for seven or eight days, according to the practice of the English surgeons.—Dr. von Dumreicher said that the danger attending operations to which reference had been made bore no proportion to the slight inconvenience which the patients suffered; and this was the reason why they had not been able to hold their ground in surgery. Embolism often followed injection; and compression was liable to be followed by pyæmia when the vein itself was penetrated. He was therefore disposed, especially in the numerous cases in which the inconvenience was but slight, to trust to bandaging.—Dr. Weinlechner replied that patients sometimes died of the results of varix, without any operation; and that the very favourable results obtained by English surgeons justified the operation.—Dr. Dittel agreed with Dr. von Dumreicher's observations.

*Congenital Umbilical Hernia.*—Dr. Basevi related a case which occurred in a child three weeks old. Hanging from the navel was an oval red body, with a narrow neck, and having on each side a projection, with an opening at the apex, and lined with intestinal mucous membrane. He believed that there was persistence of the omphalo-meseric duct, which had become prolapsed; and that an additional portion of intestine had followed in consequence of the child's crying. The fæces were at first discharged normally; but, on the second day after the child was admitted to hospital, they began to escape from the protruded bowel, and death occurred on the tenth day. At the necropsy, peritonitis was found in the hypogastric region. The projection on the left side of the hernia communicated with the ileum, that on the left with the cæcum.

## SIXTH CONGRESS OF THE SOCIETY OF GERMAN SURGEONS.

April 6. *Case of Echinococcus of the Liver successfully treated.*—Dr. Ranke demonstrated a case. He observed that the best mode of operation was incontestably that recommended by Simon (double or multiple puncture, followed by incision), and yet death resulted in a number of cases. The danger of infection was obviated by the use of antiseptics; and a number of cases treated in this way had been recorded in the *Berliner Klinische Wochenschrift* of the last three years. But, under the antiseptic performance of the preliminary operation, so little reaction was set up in the neighbourhood of the punctures, that the object of obtaining peritoneal adhesions was not gained. Last summer a man aged 38,

a patient of Professor Volkmann, who had had for five years a hydatid tumour of considerable size, was operated on, according to Simon's method, with antiseptic precautions. After some days an incision was made; the surface of the liver had become adherent to the abdominal wall at the punctures only by two thread-like bands; beyond this there were no adhesions. As a repetition of the proceeding gave no prospect of greater success, an endeavour was made to produce union between the surface of the liver and the abdominal wound; the wound being covered in with Lister's antiseptic gauze. This was not followed by fever nor by tenderness of the abdomen; and union of the liver with the edges of the wound took place. After seven days an incision was made into the cyst itself, and healing took place under antiseptic dressing, without any further disturbance. In November 1876, a girl aged 16, who had been ill one year and a quarter, was admitted for the first time into Volkmann's clinic. She had a tumour connected with the right lobe of the liver, and extending three finger-breadths beyond the umbilicus. It was as large as a man's head. After an exploratory puncture with Pravaz's needle, the abdominal wall was opened on December 5 by an incision more than three inches long, two finger-breadths from, and parallel to, the false ribs. In order to cause the wound to gape sufficiently, semilunar pieces were cut from the peritoneum, until the surface of the liver was sufficiently exposed. Antiseptic gauze was then applied. On the ninth day an incision was made into the cyst. In both the cases this was done without anæsthetics, as the liver-tissue, which in both still covered the cyst to a depth of 0.4 to 0.2 inch, was almost without sensation. In the second case there was only a single sterile echinococcus cyst, which was removed on the fifth day. Three and a half weeks after the operation the wound was reduced to a fistulous opening 0.6 inch deep, and the patient was dismissed cured. Besides these cases, this method had been applied during the last three years in three other cases in Dr. Volkmann's clinic—two of extirpation of abdominal tumour, in which the peritoneum was extensively opened, and one of diagnostic incision of a renal tumour. In the latter case, a diagnosis of hydronephrosis had been made; the abdomen was opened in front, and a portion of the tumour removed for microscopic examination; and, after the impossibility of extirpation had been ascertained by manual exploration, the incision in the tumour and that in the abdominal wall were carefully closed by catgut sutures. In five days healing had taken place. In the other two cases also there was no peritonitis.—Dr. Israel related a case of hydatid of the liver, in which rupture into the pleural cavity took place. After several unsuccessful attempts to reduce the pleural exudation and starve the echinococci, Dr. Israel made an incision into the pleural cavity, and removed the echinococci by aspiration with Nélaton's catheter and a syringe. For some months hundreds of echinococci, both living and dead, were found in the cavity, but the exudation did not become purulent.—Dr. Pauly had operated in one case according to Simon's method. A fistula, however, remained. After the echinococcus sac had been thrown off, 500 grammes of pure bile flowed from the wound. This led to the diagnosis of a second sac, lying beyond reach. Fourteen hours after the patient's death, Dr. Pauly made a necropsy, and discovered a sac as large as a child's head full of pus, which could not be felt during life.—Dr. Hirschberg spoke in favour of Simon's method, but would



be disposed to make seven or eight punctures instead of two. Adhesion of the peritoneum to the abdominal wall took place rapidly, and the operation might be proceeded with in twenty-four hours without danger of opening the abdominal cavity.—Dr. Trendelenburg had met with a case in Rostock in which a man was admitted into hospital with a very large echinococcus of the liver; he was operated on, and the case ran a favourable course, although a large incision was made. Six months later he returned with a hydatid of the left lobe of the liver, accompanied with fever. Suppuration had taken place in the sac, and, as there was already adhesion between the liver and the abdominal wall, an incision was made the next day. The operation was perfectly successful. In this case, then, the same patient was operated on for a large hydatid of each lobe of the liver.—Dr. Volkmann said that the number of cases in which death had followed preliminary puncture was not small. In Halle a case had proved fatal after being treated by multiple puncture by a very careful and skilful practitioner. He had lately had a case of hydatid of the liver in a child, which was operated on. Recovery was not complete, and persistent vomiting set in. It was found that there was not only a single hydatid, but that there were five closed echinococcus-cysts in the substance of the liver. This was a very unfavourable circumstance. On examining the literature of the subject, he had found that as many as twelve well defined echinococcus-cysts might be contained in the liver. The worst condition was when they were developed posteriorly, and pushed the healthy liver forward, so that they could not be reached by palpation.—Dr. Küster related a case in which he had operated under the antiseptic method. A man aged 35 had two large hydatid cysts in the abdomen, evidently distinct from the liver. Since, as he had already stated, the adhesions were liable to be imperfect under the antiseptic method, he modified Simon's operation, by first introducing into one of the cysts a curved trocar with an opening on the convexity. When the fluid had escaped, a ligature was applied, and the abdominal wall was incised. Dr. Küster removed the first cyst; but, perhaps from want of sufficient care in the manipulations, the adhesion was torn through at one point and a loop of intestine appeared. No febrile reaction followed. He then attempted to evacuate the second cyst by introducing a trocar and cannula through the first; but, on proceeding to remove it, portions were left adherent. It finally became impossible to keep the wound in an antiseptic condition; putrefaction took place, and the patient died. On *post mortem* examination, a third cyst was found embedded in the substance of the liver, the others having been outside it.—Dr. Volkmann said that, although Simon's operation had been successful in many cases, there was always danger of escape of the fluid of the hydatid into the abdominal cavity. Again, it was in a very large majority of cases followed by fever, not of a malignant character, but attended by a general eruption of urticaria. This would be of little consequence; but much more important was the question whether the young echinococci might not be carried into the abdomen with the sutures. A case had occurred in Halle in which the peritoneum was so plentifully studded with echinococci, that the only explanation that could be supposed was that, in the previous tapping of the sac, there had been an escape of the fluid by the side of the trocar into the cavity.—Dr. Hüter related the case of a man who came under his care with a

swelling in the hypogastric region resembling a distended bladder. He complained of urinary disturbance, and a catheter was introduced, which removed a few drops of clear urine. Dr. Hüter doubted whether the tumour was the bladder, and, on making a puncture, found that he had to deal with a large hydatid cyst of the connective tissue of the pelvis. After an attack of peritonitis the patient recovered. Half or three-quarters of a year later he returned with a large echinococcus of the liver, which Dr. Hüter punctured. The patient gradually became weaker and weaker, and died of exhaustion. At the necropsy a hydatid was found in the lung, and the peritoneum contained numerous echinococci. It was a question whether the latter had not been sown in the cavity when the first puncture was made. The presence of hydatids beyond the liver indicated a multiple development of echinococci.—Dr. Bardeleben had operated in more than forty cases with caustic, and always with successful result. He applied Vienna paste over a surface two finger-breadths wide, and corresponding with the extent of the cyst. This laid open the abdominal wall in from six to nine days, and the cyst was readily emptied. Healing was unattended with any trouble. He had made incision in one case only, which Dr. Langenbeck had repeatedly punctured. The patient, a young man, had a hydatid swelling of very large size in the posterior part of his body. It had been suddenly developed. There was much inflammation. The sac discharged, with a large quantity of fluid, about 2,000 echinococci, many of which were of sizes varying from a pigeon's to a hen's egg. The application of caustic did not produce much pain.—The President (Dr. von Langenbeck) remembered the case mentioned by Dr. Bardeleben. The patient had a hydatid of the size of a child's head. He punctured it with a trocar, and a clean fluid emerged, containing many echinococci. Recovery was apparently complete. After some time the patient returned with a second tumour, which was not present on the first occasion. Dr. von Langenbeck did not know whether it was a relapse or a new sac developed from the posterior part of the liver.—Dr. Winckel mentioned a case observed by Küchenmeister in which a hydatid sac on the under surface of the liver underwent ossification.

*Gastrostomy.*—Dr. Schönhof of Königsberg showed a patient on whom he had performed gastrostomy, on account of cancer of the œsophagus, and made some remarks on the operation. Gastrostomy in cases of œsophageal stricture had not, on the whole, been successful; at least when it was performed for the purpose of artificial nutrition in cases of deeply seated stricture. On the other hand, most of the cases in which the stomach became adherent to the abdominal wall were very successful. A large number of cases of cancer came to Königsberg from Russia. Some of them did not submit to operation, while in others he was not called on to operate until the patients were in a hopeless state. Of the fourteen cases of gastrostomy recorded in medical literature, one only lived forty days, two or three survived for ten or eleven days, while the remainder died from twenty-four to forty-eight hours after the operation. An objection often urged against the operation, one which was not without foundation, was that it might be very difficult to find the stomach. In many cases this organ was very small and contracted, and in this state might be quite covered in by the left lobe of the liver. Cases had occurred in which the operator, not being able to find the stomach, had opened the

transvene colon. Dr. Schönhorn believed that the difficulty might be obviated by operating before the oesophageal stricture had become too narrow to allow the passage of a fine sound, and while the patient can still swallow fluids. In order to ascertain the position of the stomach, he used a simple method, which he had learned from Dr. Schreiber of Königsberg. A small thin India-rubber bag was fastened over the end of an oesophageal sound and rolled together. It was then introduced into the stomach and inflated. The bag, of course, would burst after some time. In the case in which he operated that day, the stomach, the contour of which could not be previously made out, was easily felt at once after the introduction and inflation of the bag. The patient had been fed with milk alone for four weeks, and the stomach was much contracted. Dr. Schreiber had used this method for the purpose of ascertaining the position of the stomach in cases of abdominal tumour. When a sound with a bag could be thus introduced, the operation was much simplified, for the stomach lay close to the abdominal wall. In the case on which he had operated, Dr. Schönhorn had demonstrated the utility of the proceeding by alternately withdrawing and distending the bag. After making an incision, he fastened the stomach to the edges of the wound by means of a long gilded pin and sutures, and applied antiseptic gauze. On the fourth day there was slight collapse; the patient had no fever, but for about ten days was troubled with frequent eructation. In consequence of the collapse, he thought it desirable to give the patient more nutriment. On the evening of that day he removed the pins, with some fear, however, lest complete adhesion should not have taken place. It was, however, firm. On the tenth day he removed all the sutures, leaving an opening four or five centimètres (one and a half to two inches) wide, through which food could be introduced. The patient had lived three months since the operation, and could take solid food. He had each day two or three beefsteaks, which he chewed and then spat into a spoon, by means of which they were introduced into the stomach through the opening. The peristaltic action of the stomach could be seen through the aperture. The waves commenced in the posterior wall, and proceeded towards the lesser curvature, and then, with varying rapidity, towards the large curvature. Dr. Schönhorn had not been able to observe peristaltic action in the anterior wall, probably in consequence of the adhesions. The patient was constantly thirsty, although supplied with fluid to any amount; he drank water or beer eagerly whenever he had an opportunity, discharging it again through the opening in the abdomen. This was attended with energetic circular movements of the stomach, which continued for some time. In concluding his remarks, Dr. Schönhorn advocated gastrotomy in cases of deeply seated oesophageal cancer, and especially of cicatricial stricture of the gullet. Verneuil had operated successfully, and he believed the patient was still alive. It was essential to avoid, if possible, opening the stomach in the first stage of the operation, for the peristaltic action was for a time suspended. The best place for the incision was near the middle line, parallel to the border of the ribs.

## REVIEWS.

### *The West Riding Lunatic Asylum Medical Reports.*

Edited by J. CRICHTON BROWNE, M.D., F.R.S.E.,  
and HERBERT C. MAJOR, M.D. Vol. vi, pp. 309.  
London: Smith, Elder, and Co. 1876.

SIX years ago, Dr. Crichton Browne published the first volume of this series of Medical Reports; believing that our large asylums afforded material enough for the support of such a volume, and feeling that no better means could be devised to keep the medical officers of a large asylum in the constant presence of that higher duty they owe to the profession and humanity, which the sufficiently hard work of administrative routine duties tends to obscure, than by offering them an opportunity of publishing the results of any investigations they might undertake. That hasty or ill considered observations might not be published from a feeling of compulsion, it was not, in the first instance, intended that the volume should be annual. But the magnificent field which the large size of this Institution, with its 1,500 patients, offered, together with the fact that the area of the contributors enlarged as the clinical assistants who came for short yearly residences departed for some new sphere of labour, led to the annual appearance of a volume. It was said by some critics, that a yearly volume, which admitted only original papers mainly of a practical nature, could not be maintained in a state of efficiency. A glance at the contents of the volumes heretofore published will give a sufficient answer to this objection. Instead of a decay in the quality of the matter, and a reduction in the quantity, which would mark the decadence of such an effort, we find a gradual development in each particular; and the present volume is no exception to this rule of progressive excellence. When the history of the development of the knowledge of the localisation of cerebral function comes to be written, it will have to draw largely from the pages of these reports. Ferrier's first observations on the localisation of function in the cerebrum were made in the pathological laboratory of the West Riding Asylum, and the results appeared in a volume of the Reports.

The observations there recorded led to investigations into the localisation of cerebral diseases, and several very instructive papers have appeared; notably one in the present volume, by Dr. Crichton Browne, on the Pathology of General Paralysis.

From the records of 1,800 *post mortem* examinations, Dr. Browne believes that the most constant and characteristic pathological conditions observed is an adhesion of the thickened pia mater to the subjacent grey matter of the convolutions in certain regions. This fact was first noticed by Bayle, who believed the disease to be of the nature of a meningitis; and, although noticed by all observers, it has heretofore been regarded as a secondary and nonessential feature. Dr. Browne says: "So long as I continued to examine the brain in the usual way, and to test the relations of the pia mater to the subjacent grey matter only at a few points haphazard, so long did I share the prevailing belief that the adhesions between these were only occasional and secondary. It was only when, in pursuance of some anatomical researches, I carefully stripped the whole brain in many cases of general paralysis, that I came to recognise the frequency of adhesions more or less extensive in some regions of the cerebrum. Since then I have come to the following conclusions. I.



These adhesions constitute the most constant pathological change in general paralysis; 2. They explain the essential nature of the morbid process in that disease; 3. They will also, when minutely studied, explain its symptoms and progress". That they are the most constant pathological change will not be disputed; but, in order that they should fulfil the second proposition, they would need to be invariable as well as constant.

Dr. Browne believes that, on a thorough and time-consuming examination of the brain in these cases, 80 per cent. will be found to have the characteristic adhesions in some portion of the organ. Thus, 20 per cent. of the cases are admitted to have no recognisable adhesions. How are they to be accounted for? Dr. Browne thinks that some of them may be eliminated as not being general paralysis—error of diagnosis being a not impossible event. And, curiously, it was in just those cases where a doubt had existed during life as to the diagnosis that absence of adhesions was found after death; the real difficulty being to diagnose between general paralysis and chronic atrophy; and it is in just those cases which have most resembled chronic atrophy, that adhesions have been wanting.

It is also a significant fact, that adhesions are always most plentiful and firmest in the most typical and acute cases of the disease, and firmest in the most protracted cases; and this last circumstance is worthy of consideration in another connection. For it is possible that adhesions may have existed at an early period of the disease, and have been broken down and melted away in the subsequent wasting which has taken place. But, in the event of these causes being insufficient, does the absence of these appearances in a few cases of undoubted general paralysis render the proposition of its essential nature untenable? Assuredly not. For the process of which these adhesions are the result in the majority of cases may, in a few cases, fall short of their production, and their absence in these cases is not more perplexing than the similar absence of characteristic lesions often met with in other diseases, viz., small-pox and scarlet fever without the eruption.

Dr. Browne meets the possible objection that adhesions similar to those met with in general paralysis are found in other forms of cerebral disease, by ascribing their presence to a similar inflammatory process; and in all the diseases in which they are found the symptoms are found to bear some general resemblance to those met with in general paralysis. Meningitis, acute, chronic, and tubercular, with chronic alcoholism, and syphilitic cerebral disease, are instanced in this connection.

It is pointed out that, in chronic meningitis, the symptoms are often almost identical with those of general paralysis; and, that here the adhesions would be indistinguishable from those of general paralysis but for the presence of pus, which is never seen in the latter disease. And it is suggested that, in general paralysis, there is an inflammatory irritation of lower intensity than the suppurative, and ending in non-purulent products. The scattered character of the adhesions in general paralysis as opposed to their greater diffusion in chronic meningitis, is attributed to their different starting points—the inflammatory action in general paralysis commencing in the cerebral substance, and, in meningitis, commencing in the pia mater. The tendency of all congestions or inflammations in the pia mater is to become widely diffused, whilst the tendency of those originating in nervous substance is to confine them-

selves to small areas. The harmony of this view of the origin of the pathological changes in general paralysis, with the etiology of the disease (abusive functional activity of the brain), Dr. Browne regards as an additional proof of the correctness of his theory.

Dr. Browne regards general paralysis of the insane as a low form of inflammation, originating and involving certain nutritive areas of the cerebral cortex, and resulting in adhesions of the cortex to the pia mater. He draws a parallel between this disease and chronic meningitis, whose symptoms both during life, and pathological changes seen after death, have many points of resemblance.

In chronic meningitis, however, the inflammation is largely diffused, and the vascular supply and the continuity of the tissue involved is favourable to the extension of the inflammatory action, and also to its greater intensity. In general paralysis, on the contrary, the inflammatory action is low, and the action circumscribed by the smaller extent of the nutritive areas it involves. Dr. Browne is unable to agree with Westphal, but gives in his adherence to the theories advanced by Bayle and Meyer. The slight elevations of temperature found from time to time in the course of the disease (Dr. Mickle), together with the increased elimination of urea (Dr. Hewson), are called in to support this inflammatory theory. Dr. Browne points out that the ganglion-cells are the real centres of the origin of the disease (Meschede); and animadvertes strongly upon the impression one may get from many works upon cerebral disease, that the blood-vessels, membranes, and connective tissue are alone subject to disease; the cerebral cells enjoying an immunity. He quotes Simon to the effect that the state of the covering membranes of the nervous system may be looked upon as an index of changes more or less distinctive, which the centres, in their own intimate composition, have at some time undergone. Dr. Browne further believes, that the adhesions will be found to be distributed, not by community of blood-supply, or by continuity of structure, but by a loss of functional connection. The fact that adhesions are met with only on the summits of the gyri, whilst no portion of the cineritious substance of the convolutions is less liable to cell changes than another, Dr. Browne thinks to be due to pressure of the brain-surface against the bones of the cranium, originating in the variations of intracranial pressure caused by the respiratory and cardiac oscillations; the irritation thus caused leading to exudation and adhesions. Having thus shown what he believes to be the nature of the disease processes, and believing that their distribution is mapped out by the adhesions, Dr. Browne holds that these latter become the legible records of a series of experiments of the most instructive kind performed upon the human brain by disease, guiding us with more or less precision to the localisation of function. The nature of the morbid process in the disease imitates, as it were, the experiments of the physiologist; it first stimulates, and then breaks up a centre; it first produces a discharging, and then a destroying lesion, and thus affords facilities for ascertaining in which region of the cerebrum certain groups of movements are most represented, and in what order these movements are grouped and arranged.

In order to get an accurate representation of the localisation of adhesions, it is necessary to prepare the brain by steeping in a solution of nitric acid (1 to 10): the membranes become destroyed,

leaving the patches where adhesions had taken place rough and crooked. Eight plates which beautifully illustrate the condition observed in six brains of general paralytics are introduced, with the notes of the cases taken during life. The notes are not full enough to be of much value in association with the lesions observed. Generally, however, Dr. Browne proceeds to indicate the correspondence between the symptoms and the locality of the adhesions drawn from 12 brains, and verbal records of 40 cases. The adhesions are seen to be confined to the anterior three-fourths of the brain, the posterior fourth being free. The island of Reil is another region found free from this distinctive lesion. The frontal lobe is the favourite site; here, if anywhere, they are found, and they are most firm over its superior external and internal aspect, and over the orbital lobule they abound. The anterior portions of the three frontal gyri are the most obnoxious, and the adhesions decrease as the convolutions recede. Dividing the frontal lobe into three belts, the adhesions are most pronounced in the anterior and posterior, and best marked in the median belt. On the orbital lobule the olfactory sulcus is most constantly involved. They are next frequent in the parietal lobes, and then on the temporo-sphenoidals. Both hemispheres are about equally affected, and there is generally a considerable degree of symmetry in the distribution of the adhesions over them, but they are, perhaps, more numerous over the right hemisphere.

Dr. Browne gives a sketch of the symptoms of general paralysis, dividing them into psychical and motor, and contrasts them with the lesions; remarking that the psychical symptoms point to the primary involvement of the frontal lobes, which have been fixed upon by Ferrier as the centres of attention, and of the intellectual and reflective faculties; and where, as we have seen, adhesions are numerous and constant in general paralysis. The order in which the motor symptoms present themselves corresponds pretty closely with the order in which, according to Ferrier, the motor centres are arranged in the cerebrum from before backwards. Space will not permit a fuller analysis of this most valuable contribution to the literature of cerebral disease, which will well repay the careful attention of all interested in nervous pathology. The paper is admirable, whether we have regard to the masterly manner in which all the events in the disease are marshalled before us, and have applied to them the most recent discoveries in cerebral physiology, or to the lucid style and elegance of the composition.

Dr. Major's paper upon the Histology of the Island of Reil is intended to be the first of a series on the investigation of the minute structure of this portion of the brain in the human subject under varying conditions, and in the ape. The facts that the central lobe is the portion of the brain which first appears in the human foetus, that this is peculiar to man and the higher apes, and also that there are grounds for believing it to be connected with the exercise of the faculty of language, render its study interesting. Taking the brain of a young man, aged 24, who was accidentally killed when in perfect health, Dr. Major made many sections through the various portions of the island of Reil, and illustrates his paper by means of two plates, which are faithful representations of his sections as seen under the microscope, and are beautifully executed as chromotypes by Banks and Co. of Edinburgh. He adopts and figures six layers in the cortex, following Bail-

larger, and differing from Meynert, who figures as one layer the fifth and sixth. The investigation led to the following conclusions.

1. The cortical layers of the insula agree in number, order, and general arrangement with those of the vertex, but the cells in the *third* layer are in the insula generally smaller than at the vertex. The vessels of the neuroglia present no peculiarity.

2. The various gyri forming the insula present similar structure.

3. No difference of structure can be detected in the right as compared with the left insula.

4. The method of union of the white matter with the cortex is, in the insula, similar to that observed in other lobes.

Mr. Bevan Lewis's paper, recording Calorimetric Observations upon the Influence of Atropine, Picrotoxine, Solanine, Hyoscyamine, Strychnine, Ergotine, and Chloral, is not only important as a contribution to the literature of the physiological action of the drugs in question, but is also of value in relation to the theory of the formation of animal heat. His observations show that, generally speaking, these alkaloids affect the production of heat in the body differently at different periods after their administration; and that these variations in heat-production correspond with conditions of contraction or dilatation of the arterioles. After the administration of atropine, a fall in body-temperature is observed, accompanied by a rise in the calorimeter, showing a dispersion of heat. In the second stage, there is a reduction of the heat-production. After ergotine, there is first an arrest of thermogenetic activity, shown by a fall in the body-temperature, followed by a large amount of heat generated, observable as retained heat, by the rise in body-temperature, and as dispersed heat by the rapid rise of the calorimeter. The heat-production is very great in this case, being as much as 13 heat-units for each gramme of weight.

Dr. Lawson gives a further account of the Action of Hyoscyamine in Mania and in the Epileptic Status. The conclusions which he draws have been already given (see page 283).

The Climacteric Period in Relation to Insanity is the subject of a paper by Dr. Merson, who found that, although the largest number of cases of insanity, out of 1,500 recorded, occurred between the ages of 25 and 40 years, yet the number of cases of insanity occurring in women in the population of the West Riding was largest between the ages of 45 and 55. He also draws up a table of the ages of 333 cases of climacteric insanity, and contrasts it with that of Dr. Tilt, giving the ages at which most women cease to menstruate. Dr. Tilt found that most women ceased to menstruate between the years of 45 and 50, and the largest number of the 333 cases were found to occur between those ages; the years between the forty-fourth and the forty-eighth year being most liable to an attack. The outbreak of the attack is generally determined by some influence of a psychological character. Single women are more liable to insanity at this age, but this result is not attributable to the menopause, but to other influences incidental to this term of life. When not complicated by organic cerebral disease, the symptoms were of three classes:

1. Simple depression, without hallucination or intellectual derangement;

2. Great depression, with emotional disturbance, hallucinations, and vague delusions of a depressing nature;



3. Delusions of suspicion and persecution, with hallucinations and outbreaks of excitement.

Dr. Merson, in searching for an explanation of these symptoms, rejects the theory that they are due to retention in the blood of something which has been wont to find its way out of that fluid by the menstrual discharge, and also the anæmic theory. He inclines to the belief that the explanation will be found in the influence of the ovarian irritation upon the ganglionic nervous system which has command of the blood-supply of the brain.

With regard to prognosis, Dr. Merson does not share the opinion of Bucknill, Tuke, and Schroeder van der Kolk, that it is unfavourable as regards recovery; and his investigations lead him to believe that, apart from organic cerebral disease, the proportion of recoveries is as high as 59.5 per cent. Our experience agrees with that of Dr. Merson.

The Cranial Outline of the Insane and Criminal by Messrs. Clapham and Clarke is full of interest, shedding new light upon various obscure phenomena. The paper represents an immense amount of labour and patient research. Indeed, no better example could be found of the manner in which patient work undertaken without any preconceived hypothesis is often rewarded by the opening up of unexpected relations between known facts and newly revealed ones.

By means of an instrument called the "conformateur", used by hatters for taking the form of the head, the authors, after submitting over 2,000 heads of the sane, insane, and criminal to observation, discovered that an insane type or shape of head was readily distinguishable; and that, although no criminal type of head-shape could be found, yet the heads of criminals differed in many particulars from those of either sane or insane persons. One very interesting fact observed was, the remarkable prevalence amongst the insane and criminal of left-headedness, or greater capacity on the left side, which was more marked in some diseases than others; and, as bearing upon the "driving side" for convulsions, it is interesting. It is very common in epilepsy, and is found more in this disease than in any other; according with Dr. Hughlings Jackson's theory that the left brain is especially motor in function.

There was also observed to be a connection between the left-handed and right-headed; for, amongst the criminal, a number of left-handed individuals were found to be right-headed. The insane type of skull-shape is characterised by its having the greatest transverse diameter placed in the anterior third of the skull, and is, in fact, the head possessed of that "noble forehead", so much admired by the public as an index of intellectual power.

Space will not permit us to notice the many interesting and novel facts classed under the heads of Size, Age, Height, Weight, Complexion, Disease, Sex, Nationality, Right- and Left-Handedness, Sane and Insane, for which we refer the reader to the original paper, which will well repay a careful perusal. The authors promise a further contribution on the subject, and we would suggest, as worthy of their notice, the fact that the size, and doubtless also the shape, of the head, differ in various parts of the kingdom. Hatters are aware of this fact, it being a custom of the trade to send small sizes to the south and west of England, and larger ones to the north. Whether this fact is to be attributed to original race-distinctions, or to the greater mental activity in the northern counties, may be worthy of solution. Whether there is any relation between the shapes of the head in the

insane in the north and west or not, we are certain that, in the western asylums, there is an absence of that boisterous turbulence which is so marked a characteristic of the northern lunatic as seen in the asylums of Lancashire and Yorkshire.

This volume also contains the following papers: The Weight of the Brain in the Insane, by Mr. Clapham; Classification and Nomenclature in Nervous Diseases, by Dr. A. H. Rabagliati; Epilepsies, and the After-Effects of Epileptic Discharges, by Dr. Hughlings Jackson; Notes on the Therapeutics of some Affections of the Nervous System, by Dr. J. Milner Fothergill; Cases on the Borderland of Insanity, by Dr. H. Sutherland. These, which space will not permit us to notice, complete this volume—in our opinion, the best of the series.

CHARLES ALDRIDGE, M.D.

*A Practical Treatise on Diseases of the Skin.* By LOUIS A. DUHRING, M.D., Professor of Diseases of the Skin in the Hospital of the University of Philadelphia, etc., etc. Philadelphia and London: J. B. Lippincott and Co. 1877.

WE had occasion, not long ago, to review in these columns the first fasciculus of an Atlas of Skin-Diseases by the author of this work, and now we have before us what we believe we may call the first complete treatise on cutaneous medicine that has been issued in America.

The author dedicates his work to his old master Hebra with profound sentiments of regard and admiration, and, in his preface, we are told of the abundant opportunities enjoyed by him for studying skin-diseases in various parts of Europe. As the result of a wide range of observation, Dr. Duhring is moved to express his opinion that in many instances skin-diseases differ materially in type on the European and American continents; and he further states, what is of marked interest, that the diseases met with in the United States more closely resemble those of Great Britain than of France or Germany. Dr. Tilbury Fox has already offered the like explanation as an illustration of the different views as to therapeutics entertained by the dermatologists of these countries. Dr. Duhring's observations in the New World are certainly worthy of note, if we bear in mind how largely the United States are recruited from the European continent, and, in illustration of this, we may mention the fact that the German community in New York alone exceeds by far the population of any German metropolis.

This work is divided into two parts. The first includes, under the head of "general considerations", an excellently condensed account of the anatomy of the skin, with several well-executed engravings. The symptomatology of skin-affections is next discussed, very clear definitions being afforded of the distinct primary lesions, and the secondary results of these. Chapters follow on pathology, diagnosis, treatment, and prognosis; and part I (comprising one-sixth of the volume) is closed by the important subject of classification.

As might be expected, the author declares himself mainly a follower of Hebra; but, as no professing dermatologist, so far as we know, ever adopted *in toto* the classification of any other authority, but either evolved new methods for himself or modified preceding classifications, so here our author gives a modification of his master's scheme, and we can commend it. It is really satisfactory to find that Dr. Duhring has not

given long disquisitions upon the exanthematic fevers, which most writers on cutaneous medicine think they are called upon to do. No one opens such works, we imagine so at least, to obtain guidance for the conduct of these illnesses; and we believe all that dermatologists have to do with them is to give clear accounts of the skin-affections actually induced by, and forming part of, these morbid states. But our author errs, we think, in not giving such accounts. A practitioner, or a good student, may fairly resort to a standard work on cutaneous medicine for a clear and authoritative account of the skin-lesions characteristic of variola, varicella, rubeola, or typhoid fever, and should find there what he seeks. He does not want to know any more at the hands of a specialist who probably never treats such cases. We hope Dr. Duhring will add a chapter embracing these matters in a future edition of his work.

The following are the nine classes given in the author's scheme: 1. Anomalizæ secretionis; 2. Hyperæmiæ; 3. Exsudationes; 4. Hæmorrhagiæ; 5. Hypertrophizæ; 6. Atrophizæ; 7. Neoplasmata; 8. Neuroses; 9. Parasitæ.

Part II treats of special diseases. We have examined the author's work on most subjects, and have to confess to great pleasure in following his arrangement.

Dr. Duhring gives the plainest evidence that he is a large-minded, well-read, and accomplished dermatologist. He has, we know, done good original work in various subjects; but he has the modesty and good taste not to parade unduly his own researches, and he invariably acknowledges and quotes with accuracy the labours and views of other writers. He further displays strong sense and right judgment, by ignoring literature which bears manifest token of imperfect observation or of hasty generalisation. We have little sympathy with writers or compilers who are content to quote and propagate the views of all and sundry contributors upon any given subject.

In these days, when so much is written and published, great discrimination is called for, and much wariness is needed to sift out the chaff from the good grain. The propagation of trash by means of the multiplied channels now-a-days provided for circulation of matters medical, is one of the greatest plagues of professional literature, and the time of busy men is wasted in this sifting process.

Respecting herpetic affections, Dr. Duhring does not describe sufficiently the occurrence of labial herpes in cases of pneumonia as so very marked a feature as it undoubtedly is, and the fact of the general benignity of these pneumonias is not noted. Neither is herpes frontalis described, though there is much to be told of this affection, of its relation to intra-ocular troubles (h. ophthalmicus), and also of its tendency to be followed by enduring scars. The occasional accident of herpetic outbreak during an arsenical course is not alluded to.

Morphœa and Addison's keloid we find included under the one term, morphœa. We like best to refer to the latter name those peculiar cases only where the frontal region, commonly on the left, is affected, and which, in Dr. Hilton Fagge's opinion, seem to demand a special nosological niche for themselves. But when we find Dr. Duhring alluding to morphœa again on p. 441 under the name of leprosy, we cannot believe that he recognises the disease known in England by this name. He describes it as "an affection of an atrophic nature, the patches being normal in sensibility". This is cer-

tainly not the case. Both in the varieties, *M. plana* and *M. tuberosa*, there is altered, blurred, sensibility, and the fact of there being the latter variety—which we believe, indeed, to be but a phase of the disorder—shows that atrophy is no special character of it.

Dr. Duhring seems unwilling to see any connection between jaundice and xanthelasma. That there are relations between chronic jaundice and chronic disease of the liver and this peculiar affection, no one can doubt; but that it may be associated both with other and with no recognisable disorders whatever, must also be conceded. Excision is recommended under the head of treatment of xanthelasma, a method which is novel and rather startling. The fact that the patches are painful when cut into is not stated.

We are pleased to find a judicious use of mercury recommended for treatment of the syphilodermata. The hypodermic method of employing mercury is very properly condemned. We shall never forget the horrible spectacle presented by a patient who was thus treated—"ægrescit medendo", might, indeed, have been said of him.

The plan of mercurial fumigation is "damned with faint praise"; yet most excellent results ensue from it, especially in the squamous forms of syphilides.

There is an interesting chapter on neuroma of the skin, in which the author relates his own very remarkable case.

The disorders known as prurigo, pruritus, and pediculous disease, are in this volume excellently defined, and placed in their proper places. The first named affection seems to be as rare in America as it is in this country.

Dr. Duhring's treatment of skin-diseases generally may be summed up as that of an enlightened and well-trained physician, who is not carried away by his special devotion to one branch of medicine. His practice seems in every respect the same as that which is held to be best in this country. He may fairly be congratulated on having produced a most readable and trustworthy text-book. The volume is well printed on excellent paper, and has its edges cut, the latter being a boon that British publishers still too much withhold from long-suffering readers.

DYCE DUCKWORTH, M.D.

*Clinical Lectures on Subjects connected with Medicine, Surgery, and Obstetrics.* By various German authors. Selected by permission, from the series published by Professor Richard Volkmann of Halle. Second series. Pp. 510. The New Sydenham Society. London: 1877.

This second series of clinical lectures from German authors is a great improvement on the former volume. The opening one is on Acute Splenic Tumours, by Professor Friedrich of Heidelberg; an abstract appeared in our pages some months ago. The author considers the splenic enlargement met with in typhoid fever, and other zymotic diseases, and in erysipelas, septicæmia, etc., to be due to schizomycetes (microspores, micrococci, bacteria, bacteridia, vibriones, spirillæ). The obstetric portions of the volume, Professor Gusserow's paper on Menstruation and Dysmenorrhœa, and Professor Spiegelberg's Remarks upon Exudations in the neighbourhood of the Female Genital Canals, though carefully written and well translated, are scarcely equal to the rest of the book; at all events, there is little novelty for the English reader. On the other hand, the paper by



Professor Kehrér of Giessen on the Food of Infants is an extremely valuable one. It may be news to some of our readers that cow's milk is easily distinguished from human milk by the simple test of acetic acid, which produces no microscopic changes in human milk, but forms large firm coagula of casein in cow's milk. Yet Simon drew attention to it in his inaugural dissertation, published under the title "Die Frauenmilch, etc., Berlin, 1838". Professor Kehrér speaks highly of Nestlé's milk-food for infants, but is not very favourable to Liebig's food. In regard to wet-nurses, he very properly insists upon a thorough examination of the candidates for this office; the genital organs must not be omitted from this examination. Lastly, he fully recognises that there are peculiarities in the stomachs and digestive powers of infants, just as there are in those of adults. Hence, what is food to one child, may be poison to another.

Professor Leube's paper on the Treatment of Diseases of the Stomach, translated by Dr. Whitley, contains a great deal of interesting matter. The author insists that our treatment of almost all the diseases of the stomach resolves into the treatment of dyspepsia. He thinks an absence of sufficient acid a very common cause of indigestion, and very properly insists that a sour smell is by no means a proof that the gastric contents are acid, or that the acid, if present, is the right acid for digestion. Further illustration of the good effects of his solution of extract of meat are given. It is prepared for him by Dr. Mirus, Court Apothecary in Jena.

Professor Reigel's paper on Respiratory Paralysis is very sketchy and imperfect. He almost ignores Dr. Mackenzie's large experience and publications on this subject, unless a passing reference to Mackenzie be meant for this author.

Nothnagel's paper on Neuritis in relation to its Diagnosis and Pathology (not including optic neuritis), is furnished with numerous references to books and publications on the subject. The principal conclusions at which he arrives are as follows. The simultaneous occurrence of (herpes) zoster and sensory disturbance, along with an undoubted peripheral affection of a sensory or mixed nerve, implies inflammation of the nerve. So does the presence of trophic disturbance in the hair, nails, or skin; and pains which are continuous. Inflamed sensory or mixed nerves are always painful on pressure. The early appearance of anæsthesia, in connection with other symptoms, is evidence in favour of neuritis. Motor paralysis is not invariably present. Atrophy of muscles supplied by the affected nerves is a very important symptom; and, taken in connection with other symptoms, is strongly in favour of neuritis. Its absence, on the other hand, is no evidence against the existence of neuritis.

Dr. M. Lesser's clinical on Transfusion and Auto-transfusion is of especial interest to both surgeons and obstetricians. It is noteworthy that the small dog, which had nearly all the blood of a large dog transferred to it, died seventeen days afterwards, though at first it seemed none the worse; and Dr. Lesser says that other dogs have appeared none the worse for doubling their quantity of blood.

Professor R. Dohrn writes on Artificial Labour with a Narrow Pelvis, founding his clinical remarks on the case of a rachitic woman who had craniotomy done three times, and came to Marburg to have Cæsarean section done. Artificial labour was suggested by Professor Dohrn and performed by him, with the gratifying result of saving the child, although

it was a foot-presentation. In her fifth pregnancy he was equally fortunate. He thinks that a primipara, if deformed, should be treated just the same as a multipara. From the thirty-fourth to the thirty-fifth week is the best time. He objects to a catheter being used to induce the labour, as more liable to introduce air than a bougie. Early rupture of the membranes he thinks a great mistake. He contributes the following statistics.

Number of deliveries.	Bad recoveries.	Percentage of ditto.	Number of children lost, <i>i. e.</i> , born dead.	Percentage of ditto.
At full term, 93	26 in 48 of these	54	81	87
Artificial pre-mature labour in same women, 64	44 (?) not stated	28 include 6 deaths	29	45

These figures are, however, somewhat doubtful, as they are given differently at the top of the same page, though the general results are the same.

Dr. Jürgensen's article on the Milder Forms of Abdominal Typhus, and Professor Wunderlich's on Syphilitic Diseases of the Brain and Spinal Cord, fully sustain the reputation of their authors.

Dr. Senator's long lecture on Diphtheria is full of suggestive matter, which scarcely admits of condensation. Why the translator should spell *cynanche* with an initial *s* instead of a *c* we cannot imagine, unless he is one of the School Board spelling-reformers.

On rising from the perusal of the volume, we have no reason to retract our opening statement that these clinical lectures are of excellent quality, and well worthy (for the most part) of a permanent place on our book-shelves.

Dr. Latham's Diseases of the Heart, Smellie's Midwifery (their clinicals), and Charcot's clinical lectures on Diseases of the Nervous System, give the members of the New Sydenham Society a very liberal return for the guinea subscribed.

*The Endemic Diseases of Tropical Climates, with their Treatment.* By JOHN SULLIVAN, M.D., M.R.C.P., London. J. and A. Churchill.

This little treatise is written by a physician, whose field of observation, as we gather from his work, has been chiefly in the true yellow fever zone. It does not surprise us, therefore, to find that the best article in his book is that devoted to the description of this terrible disease, of which Dr. Sullivan has evidently had a large experience, both among Europeans and the dark races. His description of the disease is very good and clear; he marks well the distinction between it and malarial fevers, and confirms the fact, so much dwelt on by the best authorities, of the exemption from second attacks; and he adds his valuable testimony to its preventability. Dr. Sullivan does not pretend that he can add to our knowledge of the *vera causa* of yellow fever. There is nothing in this work at all explanatory of the fact that the soil of India, so rich in malaria, is incapable of producing yellow fever, although, if once introduced, there is too much reason to fear, finding as it would many conditions closely resembling those of its birthplace, that it might become endemic, or at least graft some of its most formidable peculiarities on the diseases properly endemic to the soil. Like Behot, the

younger, the author notes one remarkable peculiarity of the disease, as observed by him in Havana, which was also the scene of Behot's observations—viz., the effect of electricity on patients labouring under the disease. "Whoever," says Dr. Sullivan, "has had any experience in yellow fever, must have noticed that patients, not only in the second grave stage, but also those who had bordered on convalescence, and who had reached the seventh day of the disease, pass suddenly during a thunderstorm into a state of imminent danger." And he adds, "So soon as a thunder-clap becomes audible, delirium and black vomit set in, and death takes place with frightful rapidity." Like all trustworthy authors who have treated the disease within its proper zone, Dr. Sullivan pronounces quinine "So essential in grave bilious fevers, of no advantage in yellow fever, and, as a preventive, it is, in his opinion, equally useless." The treatment that in his large experience he has found most successful, Dr. Sullivan appears to have first heard of from an old captain, who traded for twenty years between Rio Janeiro and Havana. This old sailor, guided by good sense and experience, directed his attention to treatment "calculated to prevent stagnation of the blood in the capillaries, and to restore the secretion from the liver and kidneys." This he effected by plunging the patient up to the knees in a hot sinapism bath, and by hot air, detained by a blanket, a chair, and a spirit lamp. When the patient's skin, thus made to act, is sweating copiously, the patient is carried to bed "wrapped in blankets," and a strong infusion of the euphorbium officinale is administered. This old nautical practitioner's next care was to "start the urine", as he expressed it, which he did by administering drachm doses of sweet spirits of nitre every hour. Free action of the bowels being also obtained by purgatives. Dr. Sullivan notes that treatment essentially the same as that just described "was adopted with very great success during a late fearful epidemic of yellow fever in Pensacola, in the Southern States of America."

Such of our readers as are familiar with the literature of yellow fever will remember the caution given by Lind, as to the necessity of abundance of fresh air for yellow fever patients, and be startled by a statement, quoted by our author, with approbation, from Dr. Reilly, a practitioner whose treatment of yellow fever, closely resembling in essentials that given above, has been very successful, to the effect that the "word ventilation has killed more people in yellow fever than anything else." Reading between the lines, we gather from this that, as Dr. Reilly's treatment consists in obtaining free action of the skin by the combined action of mustard and hot air baths, and the free use of iced water when the skin is acting, exposure to draughts of cold air are dangerous.

Two of the best articles in the book consist of the first and sixth—viz., on *Anæmia in Hot Climates* and "*Marsh-Cachexia*," although we can see no good reason for separating two subjects so closely allied, which might well have been treated together. There is a want of distinctness in Dr. Sullivan's account of the temperature curve in marsh-fevers, which, considering how much attention has been given to the subject of late years by writers on tropical disease, is strange. Our author, although sound as regards the therapeutic efforts of quinine, seems ignorant of the most effective combination of it with other drugs, viz., Warburg's tincture. To us the most disappointing articles in the book are those devoted to tropical dysentery and hepatitis. Dr. Sullivan is far from being ignorant of the value of ipeca-

cuanha in the former disease, and indeed rates it as high as that of quinine in the treatment of ague; but after strongly advising it—in a manner, however, and at a stage quite different from the mode now universal in India—he speaks with equal commendation of the calomel and opium treatment of Annesley, long since abandoned in India as the most destructive ever brought to bear against this affection. We know that in the West India Islands suppurative inflammation of the liver is by no means so common a disease as on the continent of India; this may account for many shortcomings in our author's description. Dr. Sullivan is familiar with abscess of the liver as a sequel of dysentery, but the pyæmic multiple abscess following the absorption of septic matter in dysentery is not sufficiently distinguished from the usually single abscess of hepatitis, strictly so called. On one point Dr. Sullivan is particularly sound, viz., the important part played by malaria in the causation both of tropical dysentery and of tropical abscess of the liver.

In his observations on the surgical treatment of hepatic abscess, Dr. Sullivan quotes Dr. Maclean as opposed to puncture of the liver. This is only true as regards the coarse and unsurgical method in use in the days before the introduction of aspirating instruments. Since such instruments were available, no one has advocated their use by precept and example more than Dr. Maclean.

In conclusion, although we differ from Dr. Sullivan on some points, and might have pointed out some defects in literary skill as to the arrangement of the matter in some of the articles, we believe this to be an honest work, the outcome of much careful observation and long experience of tropical disease among both the white and dark races.

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*Etude sur le Thymus au point de vue de sa Développement et de sa Regression.* Thèse pour le Doctorat en Médecine, par Dr. ANNA DAHMS. Paris. 1877.

This thesis consists of a detailed account of the results obtained by previous observers in this field, and of some original observations. From the latter we gather the following.

Dr. Dahms could find neither central cavity (Cooper, Ecker, Kölliker), nor a band (*cordon*) on each half of the gland, as described by Friedleben in "*The Thymus of Man*." With regard to the concentric corpuscles, Dr. Dahms recognises the two varieties described by Ecker. She concludes from her own researches that these bodies are found at all ages, presenting always the same variety of form; they augment, however, considerably in number, when atrophy of the gland commences. She finds, in fact, that after puberty all the glandular elements which are not undergoing fatty transformation become concentrated to form these epidermic pearls (*perles épidermiques*). Dr. Dahms is unable to trace the connection between these bodies and the capillaries described by Rancier, and quite recently by Afanassiew, and thinks the explanation of their formation given by it is the most probable. On the subject of the development of the thymus, Dr. Dahms does not give a decided opinion, but from the examination of a foetal dolphin thinks it probable that in that animal it takes its origin from the hypoblast. Dr. Dahms describes the appearances presented by the gland in man at the ages of 16, 25, and 50 years respectively, and in an ox at the



age of 6 years, and draws from them the following conclusions.

The atrophy of the thymus is characterised essentially by a fatty degeneration of its elements. This degeneration commences in the small round cells of the follicles. The fibro-plastic nuclei undergo this degeneration later, and this leads to destruction of the connective tissue elements. An increase in number and size of the concentric corpuscles takes place at the same time; but is not, according to Dr. Dahms, to be considered as characteristic of the atrophy, but rather as a secondary phenomenon, depending on the diminished functional activity of the organ. The atrophy of the thymus may, according to the authoress, be much influenced by the different morbid processes leading to the death of the individual.

Dr. Dahms announces her intention of pursuing these researches, for it is evident, as she admits, that a much larger number of observations than those here recorded are necessary to solve the problems connected with the physiological atrophy of this gland. This essay, however, without giving any decisive results, may, as the authoress suggests, serve the purpose of drawing the attention of histologists again to this subject, and the *résumé* given of the literature of the subject cannot fail to be of use to future observers. The paper is accompanied by a plate of histological drawings, and by three large plates, in which Friedleben's results on the growth and diminution of the thymus at different ages are presented in the form of graphic tracings.

E. C. BABER.

*Labour Complicated with Uterine Fibroids and Placenta Prævia.* By JAMES R. CHADWICK, M.D. Boston, U.S.A., 1877.

*Rare Forms of Umbilical Hernia in the Fœtus.* By JAMES R. CHADWICK, M.D. Boston, U.S.A., 1877.

*Pus in Ovarian Fluids.* By JAMES R. CHADWICK, M.D. Boston, U.S.A., 1877.

In the first of the above three papers Dr. Chadwick relates the case of a lady aged 42, who came under his care pregnant, with fibroid tumours of the uterus, and a placenta prævia. The pregnancy advanced to the full term. Hæmorrhage set in during labour; it was checked by plugging with a Barnes's dilator. The lower segment of the placenta prævia was peeled off. Version was performed. The child was delivered with some difficulty, owing to a fibroid tumour obstructing the way. The placenta not coming away, Dr. Chadwick introduced his hand to remove it, when to his dismay he found a large transverse rent in the vagina, situated just below the insertion of the vagina into the posterior lip of the uterus. It was just above this lip that the large fibroid was situated which had obstructed labour; and Dr. Chadwick supposes that, as the tumour slipped above the brim, placing the posterior vaginal wall on the stretch, the child's head, coming down with some force at the same moment, caused the rupture of the vagina. With regard to the diagnosis of pregnancy complicated with fibroid tumour, Dr. Chadwick thinks that, where the dulness on percussion extends beyond the distinct tumours, it is very characteristic of pregnancy. He relates seven other cases of labour with fibroid tumours and placenta prævia, which he has collected from various sources. Four of these cases terminated fatally.

In the second paper on rare forms of um-

bilical hernia in the fœtus, Dr. Chadwick points out the two starting points of this not uncommon malformation—1st, a deficient growth of the abdominal plates in embryonic life: 2nd, external traction on the intestine, by the umbilical vesicle and its duct anchoring that portion of the intestinal tube with which they are in connection outside the umbilical ring. It is, however, rare that this connection of the duct with the intestine can be demonstrated, as specimens seldom come into our hands early enough in the process of development. The paper is illustrated by five drawings of such herniæ from specimens in the Warren Anatomical Museum of the Harvard Medical College. Altogether it forms an interesting *résumé* of the generally accepted views upon umbilical hernia in the fœtus.

The third paper is an account of an ovarian cyst repeatedly tapped, the result of which operations was suppurative action in the cyst, ending in death from peritonitis. The deduction drawn is that pus in ovarian cysts calls for quite as prompt operative interference as do the symptoms of acute inflammation. In the case described it was not until the third tapping that what Dr. Chadwick designates as "ulcerative action" in the cyst leading to suppuration was excited.

FANCOURT BARNES, M.B.

#### *On the Relation of Pregnancy to General Pathology.*

By ROBERT BARNES, M.D., Physician-Accoucheur to St. George's Hospital, etc. 1877.

This paper was originally contributed to the American Gynæcological Society, and appeared in their volume of *Transactions*; it is now given in pamphlet form. Considering that the remarkable changes wrought in the female economy under the influence of ovulation or menstruation, and pregnancy, have been insufficiently studied, either separately, in the aggregate, or in their relations to general physiology and pathology, the author proceeds to discuss these changes *seriatim*. It has been too much the practice to view these phenomena singly, to consider them in their isolated character, detaching each from its natural relations to the rest.

Commencing with an account of the condition of the blood and nervous system, the author proceeds to discuss albuminuria, which may occur with all its results, uræmia, blood-effusion, and convulsions, without any organic lesion of the kidney at all. He refers to the well-known characteristics of the blood during pregnancy, increase of fibrin and the fatty phosphorised matters, and diminution in the density of the blood, the albumen being less in proportion, and the corpuscles fewer. As regards respiration, pregnancy, by suppressing the flow of blood increases the exhalation of carbonic acid. There is also an increased capillary and venous stagnation in the skin during pregnancy. There are also certain changes in the dynamic state of the circulation; superior arterial and inferior venous hyperæmia, and, with these, hypertrophy of the heart. The question is, which is the first or genetic factor—the chemical change in the blood, the dynamic change in the circulation, or the hypertrophy of the heart? Changes in the glandular system throughout the body also occur—in the thyroid especially. The spleen enlarges notably, and sometimes remains hypertrophied permanently; relapses of ague being very marked during pregnancy even in patients who for several years had been held to be cured of ague. The same applies to chorea; enlargement of the salivary glands, as

evidenced by profuse salivation, is well known. The liver and the kidneys are also affected; albuminuria, and even glycosuria, being by no means infrequent, both disappearing when parturition had been accomplished.

The suddenness of the appearance of albuminuria during pregnancy, and the rapidity with which it disappears after labour—the kidney recovering perfect integrity—prove that structural change is no necessary factor. The subject of eclampsia is briefly glanced at, as also diseases of the eye, such as amaurosis.

The influence of the action of the skin and the extraordinary activity of the lymphatic system in pregnancy and following parturition, is also commented on; the sudden diminution of arterial tension, and the attendant freedom of the capillary and venous circulation, contributing to this latter.

Hæmorrhages of pregnancy are the evidence of high vascular tension, and are a resource of nature when the ordinary regulating or safety valve machinery is at fault. Even abortion or premature labour may be only an incidental event in a salutary process, necessary to avert more serious danger.

The influence of the nervous system in dominating all blood-distribution and all secretions, and even pigmentation, is stated; several interesting cases of the latter being given.

The paper is a very suggestive one, the author pleading in extenuation of its fragmentary or sketchy character, that he has placed before us some of the difficulties that crowd upon him, in the hope of finding some solution. ARTHUR W. EDIS, M.D.

*A Clinical Study of Retro-uterine Tumours.* By ROBERT BARNES, M.D., Physician-Accoucheur to St. George's Hospital, etc. London, 1877.

To those interested in the subject of gynæcology, this contribution to the study of a question often surrounded with many difficulties, from the hands of one well able to express an opinion, will be read with much interest.

In speaking of Douglas's pouch, the author adopts Sappey's division into a median or *retro-uterine* pouch, and a *right* and a *left retro-ovarian* pouch, laying stress upon the fact that the left pouch is deeper and more capacious than the right; a fact not noticed by Sappey. It follows from this disposition, that smaller effusions, or solid bodies, are felt in vaginal and rectal examination, to be on the left of the uterus, and not directly behind it.

Following a kind of evolution process, the author begins with the best known and more simple cases; dividing them into groups for the purpose of facilitating comparison.

GROUP I. *Retroversion of the Gravid Uterus.*—Two cases—one of retroversion, the other of retroflexion, are related in explanation of this condition: a well executed woodcut being given in illustration. One feature of considerable value as regards diagnosis is that, in these two conditions, the os and cervix uteri are lifted higher up behind the symphysis, whilst, in most cases of displacement from foreign bodies pushing the uterus forward, since the mass comes down upon the uterus from above, this organ is pushed downwards as well as forwards.

GROUP II. *Extra-uterine Gestation.*—Two cases are given in full, together with a woodcut, in illustration of this condition. The chief points for discrimination are the comparative immobility of the tumour, the direction of the os uteri down-

wards and backwards, and the somewhat lower position of the os.

GROUP III. *Retro-uterine Hæmatocele.*—The uterine sound at once distinguishes these cases from retroflexion.

GROUP IV. *Dermoid Cysts.*—Four cases are given, illustrating most of the issues of dermoid cysts. Sometimes they remain passive, causing no trouble, and are only discovered incidentally at necropsies after death from quite independent causes. But usually they are roused into active mischief under the influences of pregnancy and labour, undergoing such injury as to induce inflammation and suppuration, leading to fatal forms of autogenetic puerperal fever.

GROUP V. *Retro-uterine or Periuterine Abscess, including some of undetermined origin.*—Eleven cases are appended under this heading, together with some excellent practical remarks as to diagnosis and treatment. The use of the aspirator-trocar in throwing light upon the nature of the tumour, and in giving early relief, is indicated.

GROUP VI. *Fibroid Outgrowths from the Uterus.*—Three very interesting cases are cited. In one, utero-gestation occurred between two fibroid tumours, the increase of pressure causing sphacelus in the posterior and larger tumour. Extirpation of the whole of the uterus was accomplished, but the patient unfortunately succumbed. Other bodies may get into the rectouterine sac, and produce reactions more or less resembling those observed in the cases narrated, such as—1. Ovarian cysts or other ovarian tumours; 2. Cystic or fibroid tumours of the broad ligaments; 3. Dropsical enlargement of the Fallopian tubes. ARTHUR W. EDIS, M.D.

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## NEW INVENTIONS.

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### LIME-JUICE.

The reputation of lime-juice, established many years ago, has been confirmed by the history of the recent Arctic Expedition, and by the evidence laid before the Committee. Fifty-eight cases of scurvy out of the sixty in this expedition, occurred in men who, for longer or shorter periods, had been deprived of this antiscorbutic, and who, on account of the exigencies of sledge-travelling, had been necessarily also deprived of the vegetable food for which it serves as a convenient substitute; at the same time, these men had not been subjected to any other condition that is known to cause scurvy, nor, indeed, had they all been brought equally under the influence of conditions indirectly favourable to the development of this disease. Although lime-juice was not represented in the sledge dietary, it was carried and used by some of the minor sledge parties, and especially by those who started from the ships towards the latter part of the sledging season, or visited the depôts where lime-juice was stored. The sledge parties which suffered from scurvy were not provided with it. As a preventive of scurvy, lime-juice or lemon-juice is generally used in merchant ships, and in the navy during Polar service, in a ration of one ounce daily, and it is found effectual in this quantity even during the existence of many conditions favourable to the development of the disease. The presence of a large amount of free acid in this juice endows it with the special action of an acid which is distinct from that which it possesses as an antiscorbutic.



The necessity for an increase above the usual ration of one ounce will occur when some condition obviously tending to produce scurvy is found to exist, or when by careful observation symptoms suggestive of a scorbutic taint are first detected. The most valuable agents in the prevention and treatment of scurvy are various fruits belonging to the *aurantiaceæ*, such as the orange, lemon, and lime. Their value was recognised so long ago as the sixteenth century, when Solomon Albertus, in 1573, recommended their use, and especially the use of their juice; and subsequent writers have given good reasons for supporting his recommendation. The benefit that has followed from the general adoption of this recommendation may be appreciated from the fact that, since lime-juice has been introduced into the navy in 1795, scurvy, which was formerly the scourge of that service, has gradually decreased, until it has finally become nearly extinct; while the disease is now so rarely encountered in this country that opportunities are but seldom afforded for the observation of its symptoms, or the investigation of its essential characteristics. Although there is no difference of opinion as to lime-juice being the best of all known antiscorbutics, it has not yet been decided upon which of its constituents this valuable property depends, although the probabilities founded on observation are in favour of the free acids, especially the predominating citric acid, being the valuable ingredient.

The evidence of Deputy-Inspector Macdonald, of Surgeon-Major F. S. B. de Chaumont, of Dr. Pavy, F.R.S., of Mr. George Busk, F.R.S., and of Dr. Guy, F.R.S., when under examination by the Arctic Committee of Inquiry, is most distinct and conclusive as to the value of lime-juice, both as a preventive of, and remedy for scurvy. The last-named gentleman says: "The effects of lime-juice are of extraordinary rapidity. I have seen patients materially altered in their condition in a few hours by the administration of lime-juice, and I have no doubt about the extraordinary efficacy of lime-juice as a cure for the condition which we call scurvy. As regards the question of prevention of the appearance of the symptoms of scurvy, I also think that lime-juice in sufficient quantities is adequate to the prevention of scurvy. I think that the amount of the ration which is commonly given, namely, one ounce daily—which is the ration of the merchant service—is adequate to the prevention of scurvy in voyages of the length which are generally taken. I believe that the voyages now-a-days without touching land rarely exceed three or four months, and I should say that the ration of an ounce of lime-juice daily is generally sufficient to prevent the appearance of scurvy for that time. In sufficient quantity, having relation to the time during which persons are cut off from ordinary supplies of vegetable food, I consider lime-juice to be a reliable preventative of scurvy."

Mr. Harry Leach, Medical Officer of Health for the Port of London, and Medical Referee to the Board of Trade, states that, since the Medical Shipping Act of 1867 came into operation, commonly called the Duke of Richmond's Act, by which the quality of all lime-juice was assured by legislation, scurvy has decreased 70 per cent. in the mercantile marine. He is of opinion that lime-juice is more antiscorbutic than lemon-juice, because there is more of the extractive matter in it.

Admiral Ommanney and Sir Alexander Armstrong, M.D., F.R.S., Director-General of the Medical Department of the Navy, are equally

unhesitating in their belief in lime-juice as a preventative of scurvy.

Lime-juice is also recommended by Dr. Garrod as a preventative of rheumatism and as a valuable therapeutic agent in the treatment of that disorder. As a daily article of diet, lime-juice is coming into favour; and, we are informed that, at a recent sanitary banquet, a distinguished physician and one of our foremost surgeons were observed to drink lime-juice mixed with water as a beverage to accompany their repast.

By the Act to amend the Merchant Shipping Act in 1867, before referred to, it was rendered compulsory under certain penalties for every ship to take on board lime- or lemon-juice in sufficient quantity to afford a daily ration to every member of the ship's company during the voyage. It likewise ordered that the lime- or lemon-juice should be fortified with 15 per cent. of proof spirit, and that both the juice and spirit should first be tested by the analysts of the Board of Trade in London, who should certify to the quality being right and proper to be used. To these regulations, however, there are many practical objections. In the first place, lemon-juice should not be permitted to be used at all, for the following reasons. It is vastly inferior in its antiscorbutic effects to lime-juice; it contains an excess of mucilage and a deficiency of citric acid, whence it is very liable to decompose and ferment, and when this change takes place its antiscorbutic properties are almost *nil*. This was known and admitted by the medical officers of the Board of Trade, but at that time there was no source from which a sufficiently large supply of lime-juice could be obtained—hence they were obliged to include lemon-juice in the regulations. This, however, is not now the case, since an ample supply of really good lime-juice is provided by the Montserrat Company, to the quality of which we shall refer further on. With regard to the fortification of lime- and lemon-juice by alcohol, we have already stated irrefutable reasons against such a practice. It is probable that this practice was adopted because both lime- and lemon-juice of the ordinary quality are liable to decompose or ferment, and this fermentative action is of course checked by the action of alcohol. Such an addition, however, is as superfluous as it is deleterious in the case of really fine lime-juice, such as that manufactured by the Montserrat Company. The lime-tree from whose fruit the potent antiscorbutic is expressed is a native of Western Africa, and seems early to have found a congenial habitat in Montserrat, one of the Leeward islands. It was not, however, made an object of extended and systematic cultivation till within the last twenty years. The plantations from which the fruit is gathered for the Montserrat lime-juice range along the shore for about two miles extent in one direction, to about 1,500 feet up the mountain steeps. To manufacture the fresh juice for shipment, the fruit is first carefully sorted, and the unripe or over ripe limes rejected; and only about two-thirds of the juice is pressed out for this purpose, it being found that the last portion resulting from extreme pressure is of diminished strength and quality. The pure juice, being run from the presses at once into casks, is immediately secured from the air until they are opened in England. The remaining juice is used for the manufacture of citric acid. In other lime-juice factories, the whole of the products of the lime is used; hence the inferior, and in some cases really bad lime-juice, which the sailors positively refuse to drink. These inferior samples of lime-juice are, we are informed on the best autho-

urity, frequently uncasked and, fortified with unrectified spirit, made into rum with rum-flavour. The unpleasant appearance and flavour of these compounds not unnaturally disgust the sailors with a remedy which is, in the first instance, foreign to their habits; and even when they can be induced to take it in this form, its antiscorbutic qualities are of little therapeutic value. The Admiralty have for some years been supplied with lime-juice, and lime-juice only, for the Royal Navy, with the most satisfactory results. They lay great stress upon the fruit from which it is manufactured being gathered at certain seasons, and insist upon the flavour being fine, and in a certain degree of citricity.

#### THE ALBION MILK AND SULPHUR SOAP.

This soap is one which appears to us to possess very valuable properties. A good and pleasant sulphur soap does not, as far as we know, exist in commerce; nevertheless, the value of sulphur as a local application to the skin in acne, and many forms of tinea and pruritus, is very great. This combination of milk and sulphur has produced an article of rare excellence. We have had this soap used, and can speak of it very favourably as an exceedingly agreeable and pleasant toilet soap, which we should be disposed to recommend for use in a number of cases of irritable skin, especially those complicated with acne or pruritus. It is manufactured by the Albion Sanitary Soap Company, 532, Oxford Street.

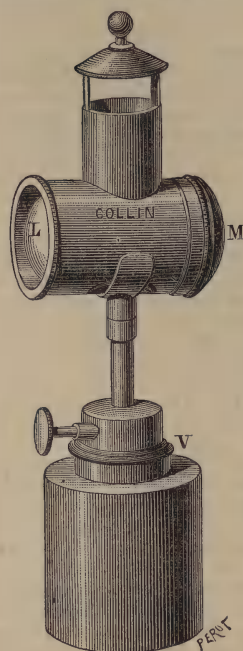
#### J. AND F. ALLEN'S PORTABLE HOT AIR AND VAPOUR BATH.

The Turkish and hot air vapour-bath introduced into use by Messrs. J. and F. Allen is really invaluable, for the safety, convenience, and simplicity with which it can be used in the bath room, dressing room, or nursery, or in the treatment of disease, in the workroom, and in the hospital wards. It can be applied to a person in bed, in sitting on a chair, or its application may be carefully localised. It produces neither smoke nor any bad odour, and is perfectly clean and devoid of danger. It is attended with very just popularity, and is largely recommended by medical men.

#### AN ILLUMINATING LANTERN FOR MEDICAL PURPOSES.

The subjoined woodcut represents a small instrument which has been well received by the profession in Paris, and is likely to be extensively employed. At the present day, more than at any other time, both the surgeon and the physician feel the need of a constant illuminative light, which can be made weak or strong at pleasure: to illuminate cavities or points of the surface, or to make a careful examination, he requires an adequate form of light, and for this purpose every one has his own peculiar plan. In fact the eyes, ears, mouth, anus, or vulva are only well lighted up in the consulting room of the practitioner. M. Colin has solved the difficulty of giving facilities for universal and constant illumination, by a portable petroleum lamp, in which the wick is fed, not by a sheet of liquid, but by a slightly moistened sponge. The lamp may be stood sideways or upset, but nothing can be spilled. The sponge holds enough oil for a long time, for the lamp thus trimmed

will burn for six or seven hours. Besides being portable, the lamp is as powerful as can be desired. The flame is placed before a reflecting metallic mirror. At the other side of the tube L, whence the



jet of light comes out, there is likewise a powerful biconvex lens; all the rays are concentrated, and it is easy to throw light on any given point. This strongly illuminating lamp is very light, and may be inclined in every direction. The flame, inclosed in a lantern, is not affected by currents of air nor by the patient's breathing. The lantern becomes rather hot, but the stem which connects it with the reservoir is so slender that the latter does not become heated, and can be held in the hand. This instrument is made in nickelled copper. It is so well arranged that it does not give out any smell. In fine, it is extremely convenient, always ready, uses very little oil, and wants but little care. Whatever may be the point to be illuminated, it will be searched by the rays of light, exactly as if it were the cornea, iris, or crystalline lens, when the eye is skilfully examined by oblique light. The flame being confined in a close chamber, no shade is needed.

#### MISCELLANY.

MADEMOISELLE ANNA DAHMS was received as a Doctor of Medicine into the Faculty of Paris on June 4th. Her thesis received the highest mark of approbation the judges could bestow, and she was warmly congratulated by the President of the Faculty.

MESSRS. P. S. D'ROZARIO AND Co. of Calcutta announce the publication, under the supervision of Major H. Godwin-Austen, of the late Surgeon-Major T. C. Jerdon's *Birds of India*, being a natural history of all the birds known to inhabit Continental India, with descriptions of the species, genera, families, tribes, and orders, and a brief notice of such families as are not found in India.



**DARWIN ON CHILDREN.**—In the July number of *Mind*, Mr. Darwin publishes some interesting psychological observations made on one of his children. The particular infant observed appears to have been generally precocious. Among many other curious facts recorded, we may instance the child's expressing his anger when eleven months old by beating a wrong plaything given him; his showing fear when four and a half months old at his father's approaching him with his back towards him; his recognising an image of his father in a mirror as such when less than two months old; and his experimenting in "dramatic art" when thirteen months old by pretending to be angry with his father in order to have the pleasure of a subsequent reconciliation. Mr. Darwin here and there suggests important psychological bearings of his facts, as in accounting for the child's fear of unfamiliar animal-shapes in the Zoological Gardens, in noting how much surprise enters into laughter, and in enforcing the hypothesis that man, previously to the acquisition of articulate sounds, communicates his feelings and wants by means of notes falling into "a true musical scale". Such carefully and intelligently made observations of infants as those of M. Taine and Mr. Darwin cannot fail to yield important psychological results.

**DEATHS IN HOSPITAL IN PARIS AND LONDON.**—Of the deaths of Paris, one-third occur in the public hospitals; while in London only one of every nineteen takes place in these institutions. Two causes, however, account for this. In the first place, the people of these two capitals are very different in their tastes and inclinations as regards home life. The Parisians live largely in the streets; they are fond of congregating together. The Londoners, on the contrary, care more for their own hearthstone. No matter how poor the artisan or mechanic, he tries to have a roof of his own. The difference in climate, no doubt, has much to do with these peculiarities of the two races; but more than this is the great difference in which these institutions are regarded in the two cities, and the vast dissimilarity in their management. The Parisian loves the hospital, be he rich or poor. If of the former, he gives freely of his means towards its support; if of the latter, he looks forward to it as a safe refuge when his days are to end by disease and suffering, when his every want will be ministered unto by the gentle hand of the patient sister of charity, and where his soul can leave its earthly tenement in peace with God and man. The Londoner, on the contrary, regards these institutions as a *dernier resort* for the outcasts and unfortunates of society, and gives to them as a matter of necessity or duty.

**ILFRACOMBE HOTEL** is certainly one of the best conducted and most pleasant hotels at any seaside resort. It is situated in a delightful spot, where the mildness of the climate is relieved from relaxing properties by the excellence of soil, and by the fresh sea breeze which sweeps over it.

**PROFESSOR BUNSEN.**—The University of Heidelberg commemorated last month the twenty-fifth anniversary of Professor Bunsen's election to the Chair of Experimental Chemistry. Students of all faculties joined in a torch-light procession, which was followed by the traditional symposium, while a deputation presented the congratulations of the Academical Council. Professor Bunsen held the Chair of Chemistry in the Universities of Marburg and Breslau before he was called to Heidelberg, and, as is well known, declined a few years ago a call to Berlin, which he received at the same time as Professor Kirchhoff, with whom he is the founder of stellar chemistry. Though at the age of 66, Professor Bunsen completes his fiftieth course of lectures at Heidelberg in the full vigour of both mind and body. From the spectrum analysis down to the simplest manipulations of practical chemistry, his luminous discoveries have rendered the most distinguished services to the science which he adorns; but he possesses at the same time the rare gift of being an eminent and most inspiring teacher.

**REMARKABLE DEFORMITY OF THE TEETH.**—The Russian traveller, M. Miklucho-Maclay, in the course of

recent travel in Melanesia, has noticed among the natives of the Admiralty and Hermit Isles a remarkable peculiarity in the teeth, the upper incisors projecting "shovel like", almost horizontally, and to such a degree as to extend even beyond the lips when the mouth is closed. The breadth, moreover, of one of these teeth is at times so great as to equal its visible length. As all the teeth have a blackish polish, due to the prevailing habit of betel-chewing, the mouth presents a somewhat ghastly appearance. M. Miklucho-Maclay has nowhere else met with a similar deformity of the teeth, but heard of such when on the peninsula of Malacca, the race in which it occurs being called "orang-gargassi."—*Leipzig Illustrirte Zeitung*, and *Nature*, July 26.

**AIR DISSOLVED IN WATER.**—At a recent meeting of the Edinburgh Royal Society, Mr. J. Y. Buchanan, chemist of the *Challenger* Expedition, read a paper on "Air dissolved in Sea-Water." Mr. Buchanan showed the water-bottle which he invented, and which was used for collecting the "intermediate waters". It consists of a metal cylinder, with a tap at each end, connected by a metal rod bearing a flap, which falls into position when the bottle ceases to descend, and is being "hove in"; the pressure of the water rushing past it causes it to descend and shut the taps, thus enclosing the desired sample of water. The apparatus for boiling out the oxygen and nitrogen, and that for determining the carbonic acid, were illustrated by diagrams, which also afforded an idea of the arrangements inside the miniature laboratory on board the *Challenger*. The general results of investigations made went to show that, while the absolute amount of oxygen and nitrogen, capable of being dissolved, is less in the case of sea-water than in that of fresh water, the proportion between the amounts of the two gases dissolved remains nearly the same; that the absolute amount dissolved, both of permanent gas and of carbonic acid, depends on the temperature; that in no case is there more gas dissolved in water taken from any depth than it would be capable of absorbing from the atmosphere in regions where the same temperature prevails at the surface; that, in fact, the water at great depths preserves all the physical properties which it had when it left the surface, including temperature, specific gravity, and gaseous contents (with the exception of the proportion of oxygen). The belief in the existence of water at great depths so charged with gas as to effervesce when brought to the surface, is not wholly false. This phenomenon is observed when water is brought from great depths in the hot equatorial and tropical regions. Near the bottom the water may have a temperature bordering on the freezing point, and will contain a corresponding amount of air. Brought to the surface, where the temperature may be between 80 deg. and 90 deg. Fahrenheit, it can no longer contain the same amount of gas; and, if in a glass vessel, the walls will be seen to clothe themselves with minute air-bells, somewhat like natural seltzer water, which has stood for a little time in an open vessel. At the surface the amount of oxygen appears to be least in the trade-wind regions, and greatest in antarctic latitudes. Below the surface the amount of oxygen diminishes, and reaches its minimum at a depth of about 300 fathoms. The rapid diminution in the percentage of oxygen occurring at depths between the surface and 300 or 400 fathoms, points to the possibility of life being particularly abundant at these depths; and this conclusion was borne out by observations made by Mr. Murray with the tow-net at similar depths. Fish had been proved to be able to support existence in an atmosphere of great vitiation. Freshly aerated water contained an atmosphere of which about 34 per cent. was oxygen, and gold fish had been known to live in an atmosphere containing only 6 per cent. There was, therefore, nothing extravagant in supposing life to abound in waters containing 10 to 15 per cent. In water actually from the bottom there were considerable variations, which seemed to depend to a great extent on the nature of the bottom, there being most oxygen over "diatomaceous ooze", and least over "red clay"; that over "blue mud" being more oxygenated than that over "globigerina ooze."

# The London Medical Record.

## MEDICAL EDUCATION IN GREAT BRITAIN AND IRELAND.

It is not our purpose on the present occasion to give full details of the courses of study and examination required by the licensing bodies, nor of the arrangements for teaching in the schools. For such information our readers must consult the regulations and prospectuses which are published yearly, and the Students' numbers of our contemporaries. In giving an abstract of information likely to be useful to the student, we shall avail ourselves of the summaries presented in the prospectuses of the medical schools.

Every medical student is required to be registered at the office of the General Medical Council; prior to which, he must have passed an examination in subjects of general education. As evidence of this are recognised, 1. The possession of a degree in Arts of an University of the United Kingdom or of the Colonies, or of some University recognised by the Medical Council; 2. A certificate of having passed an examination in subjects of general education conducted by some one or other of the educational bodies, a list of which is given with the "Recommendations of the General Medical Council". The preliminary examination having been passed, the student should at once register, as the commencement of the course of professional study is not recognised as dating fifteen days earlier than the date of registration. Forms for such registration are supplied by the licensing bodies and at the schools and hospitals.

After passing the preliminary examination, the student may commence his medical education in one of the following ways: 1. By attendance for one year on the practice of a provincial hospital or other public institution recognised for this purpose; 2. As the pupil, for one year, of a legally qualified surgeon, holding sufficient public appointments to afford such opportunities of practical instruction as shall be satisfactory to the authorities; 3. By entering at once at a recognised medical school. In the two former cases it will be necessary, in order that the commencement of study may be recognised by the Royal College of Surgeons of England, to furnish a certificate to the secretary, for registration at the College, from the medical superintendent of the hospital or other institution to the practice of which the student shall have entered, or from the practitioner whose pupil he shall have become. This certificate must be accompanied by proof of having passed the necessary preliminary examination.

The minimum period of medical study required is forty-five months from the date of registration as a student, of which time at least two years and a half must be passed at a recognised medical school.

To obtain a degree or licence, two examinations at least in professorial subjects have to be passed: one

on the elementary branches of medical education, and the other on the practical subjects.

Students who intend to obtain the diploma of the Royal College of Surgeons of England must, on entering for lectures and hospital practice in London, register their cards of admission at the College within fifteen days from the commencement of the session. In the extra-metropolitan schools, this regulation is conducted by the authorities of the schools, who return lists to the College.

Registration at the Apothecaries' Hall in London is no longer necessary.

With regard to the course of study, the prospectus of Guy's Hospital contains some excellent advice.

"During his first winter session, the student is advised to devote his chief attention to Anatomy. Immediately he has entered he should put down his name for 'a part'; and, while unemployed in actual dissection, should spend as much time as possible in the dissecting-room, attend demonstrations, and become thoroughly familiar with the bones. Physiology and Chemistry should also be studied at this period. Opportunities should occasionally be taken for visiting the out-patient departments, and acquiring some familiarity with the more common diseases and injuries, and the application of anatomy and physiology in their recognition.

"In his first summer session the student will be chiefly occupied with Practical Chemistry, Materia Medica, Botany, and Comparative Anatomy.

"The second winter session should be devoted to gaining a thorough knowledge of Anatomy, Physiology, and Histology, in preparation for the primary examination of the College of Surgeons; and, in the following summer, Materia Medica, Pharmacy, and Chemistry, may be further studied.

"Though always keeping in view the necessity of passing the primary examination at the first opportunity, it will be possible for most students to take during the first year or early in the second winter session, the appointment of assistant-surgeon's clerk, or one or more of the junior appointments.

"As soon as the primary examinations are passed, the duties of surgical ward clerk should be undertaken, if not previously performed; and the wards, *post mortem* room, and out-patient rooms, constantly attended.

"The student will be then qualified for the medical and surgical appointments, which he is required by the examining bodies to have fulfilled before presenting himself for their diplomas. It is not of great importance which is taken first, nor could any one arrangement be adhered to by all students, but the following order appears preferable: dresser in the surgery, assistant-surgeon's dresser, medical ward clerk. In the first-named appointment, the student should practice the manipulations of minor surgery, while in the second he should include the observation of surgical diseases, and their treatment by operation or otherwise. In the appointment of medical ward clerk the elements of physical diagnosis should be learnt, every effort being made to train the eye, the hand, and the ear, as well as to learn how to use the various instruments of investigation. The knowledge before acquired of microscopical and of chemical manipulation will now be fully applied; and the subject of Morbid Anatomy should be studied as each case arises.

"The appointment of clerk in the out-patients' room — assistant-physician's clerk, obstetric out-patient's clerk — should follow, and those of *post mor-*



tem clerk, dental surgeon's dresser, etc., may also be held advantageously during the third year. Cases of midwifery should not be attended until after a course of lectures on that subject, when the student should make it convenient to devote a month to the appointment of extern.

"Every student who desires to obtain the greatest advantage from his position, should seek to hold at least one, and, if possible, each in succession, of the higher students' appointments, viz., those of clinical assistant, full dresser, and resident obstetric assistant.

"Students who intend to take a degree in the University of London must somewhat deviate from the above course. They should defer entering the hospital until they have matriculated, and may with advantage pass the preliminary scientific examination before commencing the usual courses of Anatomy and Physiology. If, however, they have only matriculated, then the first year should be devoted to learning the rudiments of Human Anatomy, and attending the courses of Chemistry, Physics, Botany and Comparative Anatomy, in preparation for the preliminary scientific examination. Special classes in each of these subjects are held and examination papers given. After this examination has been passed, the second year should be devoted to Anatomy, Physiology, and the other subjects of the first M.B. examination, and until this is passed it is advisable not to undertake any higher appointments than those of assistant-surgeon's clerk, surgical ward clerk, and perhaps dresser in the surgery."

The following is taken with slight verbal alterations from the prospectus of Owens College, Manchester.

"During the first winter session the student should give his chief attention to Descriptive Anatomy and Dissections, and to Physiology and Systematic Chemistry. Students are strongly recommended to consider all these subjects as equally deserving of study, as, besides their independent claims, a competent knowledge of each is insisted upon by some of the examining boards.

"His first summer session should chiefly be devoted to Physiology, Practical Histology, Practical Anatomy, the Laboratory Course of Chemistry, and to Botany. A certain portion of his time should also be given to the practice of the Hospital and Clinical Instruction.

"In his second winter session he should strive to obtain a more exact knowledge of Anatomy, Physiology, and Histology, with the view of preparing himself for the primary examination of the College of Surgeons. He should also attend lectures on Medicine and Surgery, and Hospital Medical and Surgical Practice.

"In his second summer session, *Materia Medica*, Medical Jurisprudence and Hygiene, and Practical Pharmacy should be taken, and as much time as possible should be devoted to study in the wards, the *post mortem* room, and the out-patients' rooms.

"His third winter session should be devoted to the study of Medicine, Surgery, and Pathology, whilst in the ensuing summer session Midwifery, along with other special courses, such as those of Pathological Histology and Ophthalmology, should engage his attention."

The Royal Colleges of Physicians and Surgeons of Edinburgh recommend the following order of study for students who spend four years at a medical school.

*First Year.*—Anatomy, Practical Anatomy, Chemistry, Practical or Analytical Chemistry, Hospital.

*Second Year.*—Anatomy, Practical Anatomy, Physiology, Surgery, *Materia Medica* (the last either in this or the third year), Hospital.

*Third Year.*—Practice of Medicine, Clinical Surgery, Practical Anatomy, Practical Pharmacy, Clinical Medicine, Pathological Anatomy, Hospital.

*Fourth Year.*—Surgery or Clinical Surgery, Midwifery and the Diseases of Women and Children, Practice of Medicine or Clinical Medicine, Medical Jurisprudence, Practical Midwifery, Hospital.

They also strongly recommend students to avail themselves of any opportunities which they may possess of attending, in addition to the courses of instruction which are absolutely required, lectures on Ophthalmic and Mental Diseases, also on Natural History and Comparative Anatomy, and of obtaining practical instruction in the use of the Microscope.

If a portion of the four years be spent in pupillage with a practitioner or at a hospital or infirmary not possessing a medical school, some modification of the course of study laid down in the preceding plans will be required: but the general order will remain the same.

## INSTRUCTION IN THE MEDICAL SCHOOLS.

The medical schools in London are those of St. Bartholomew's, Charing Cross, St. George's, Guy's, the London, St. Mary's, the Middlesex, St. Thomas's, and Westminster Hospitals; and the Medical Faculties of King's and University Colleges. To these may be added the London School of Medicine for Women, which has recently been organised so as to be capable of recognition by the examining boards, and Mr. Thomas Cooke's School of Anatomy and Surgery.

In the provinces in England, there are the medical departments of Queen's College, Birmingham, Owens College, Manchester, and the Medical College of the University of Durham, at Newcastle-on-Tyne; together with medical schools at Bristol, Leeds, Liverpool, and Sheffield. The Universities of Oxford and Cambridge do not profess to give a complete medical education; but instruction in many branches is provided for, especially at Cambridge.

In Scotland, the medical schools in which a complete course of professorial education is given, are those attached to the Universities of Aberdeen, Edinburgh, and Glasgow, the Extra-Academical School in Edinburgh, and the Anderson's College, and the Royal Infirmary School of Medicine in Glasgow.

In Ireland, the medical schools are those of Trinity College, the Royal College of Surgeons of Ireland, and the Medical Faculties of the Colleges at Belfast, Cork, and Galway, in connection with the Queen's University in Ireland. There are also several medical schools in Dublin: viz., the Carmichael School of Anatomy, Medicine, and Surgery; the Catholic University; Dr. Steevens's Hospital and Medical College; and the Ledwich School of Anatomy, Medicine, and Surgery.

For information regarding these institutions reference must, as we have already said, be made to the published prospectuses. We shall, however, endeavour to classify a part of the information therein contained under certain heads, viz.: Clinical Instruction; Practical Surgery; Special Departments; Practical Physiology; Hospital Appointments; Tu-

torial Instruction; and Scholarships, Exhibitions, and Prizes.

**CLINICAL INSTRUCTION.**—At all the medical schools the physicians and surgeons deliver, at stated intervals, lectures on the cases under their care, in addition to making comments during their visits to the wards or in the operating theatre. In some instances, special provision is made by the appointment of one or more of the hospital staff as clinical professors or lecturers; and in several of the hospitals a certain number of beds are specially devoted to the purpose of clinical instruction. At Guy's Hospital, forty patients are set aside in the medical wards, and are visited and their cases lectured on by the physicians in the winter, and by the assistant-physicians in the summer session: the surgeons also select cases for clinical instruction. A similar arrangement exists at the London Hospital, where two wards containing thirty beds are devoted to the express purpose of teaching clinical medicine; the cases being lectured on by the physicians in the winter, and by the physicians or assistant-physicians in the summer. Special clinical professorships, in medicine and in surgery, in addition to the ordinary clinical lectures given by the physicians and surgeons, exist at the King's and University College Hospitals. In the former, the professor of clinical medicine is Dr. George Johnson, and the professors of clinical surgery are Mr. John Wood and Mr. Lister. In University College Hospital there are two special chairs, known as the "Holme Professorships" of Clinical Medicine and Surgery. The Holme professor of clinical medicine is Dr. Wilson Fox; according to the prospectus, he "delivers clinical lectures, and trains the students in the practical study and method of recording the phenomena of disease, giving a series of practical lessons on the physical examination, diagnosis, and treatment of disease". The Holme professor of clinical surgery, Mr. Christopher Heath, gives a clinical lecture once a week, and also holds a weekly clinical examination on surgical cases in the operating theatre; these examinations, while open to the whole class, being specially intended for the instruction of the senior students. At Leeds, clinical classes meet at appointed hours to receive instruction in the wards from the physicians. In the Liverpool Royal Infirmary, Dr. Glynn, one of the physicians, will give, once a week during the winter, practical instruction in clinical medicine and the means of physical diagnosis. In Owens College, Manchester, there is a special professorship of clinical medicine, held by Dr. William Roberts. The instruction, which is conducted in the infirmary, consists of clinical lectures on cases, and the methodical examination of patients. Each student in turn is required, under the direction of the teacher, to examine patients, to elicit the symptoms and physical signs of the disease, to indicate the diagnosis and prognosis, and to lay down the line of treatment. A similar plan is followed in the Surgical Clinical Classes, which are conducted by the surgeons of the Infirmary; the students being required, in addition, to perform the necessary manipulations, when practicable. In the Infirmarys of Aderdeen, Edinburgh, and Glasgow, clinical lectures on medicine, surgery, and midwifery are delivered by the medical staff of each institution. The Universities of Edinburgh and Glasgow have special professors of Clinical Medicine and Surgery. In the medical schools of Ireland, clinical courses are given through the session.

In connection with the subject of Clinical Instruction, reference must be made to means provided at several hospitals for the special purpose of training the students in the observation of cases. At the Charing Cross Hospital, practical instruction in auscultation, in health and in disease, is given once a week by Dr. Irvine; while Dr. Mitchell Bruce instructs in case-taking. In Guy's Hospital, the ward clerks (of whom 150 or more are appointed during the year) are assisted in the examination of cases and the preparation of reports by the medical and surgical registrars, who also instruct them in physical diagnosis and in chemical and microscopical investigation. Similarly, at the London Hospital, the clinical clerks and dressers are assisted by the house-physicians and house-surgeons. At St. Mary's Hospital, the medical tutor, Dr. Mahomed, attends the hospital once a week to direct and assist the clinical clerks, and to instruct the students in the physical examinations and systematic description of cases. At University College Hospital, Dr. F. T. Roberts and Dr. Gowers give instruction in physical diagnosis and clinical observation to classes formed for the purpose; and Mr. Marcus Beck and Mr. Barker give instruction in the observation and examination of surgical patients. In connection with Owens College, classes for medical demonstration are held in the Manchester Royal Infirmary twice weekly during the summer by Dr. Leech and Dr. Dreschfeld; in which classes instruction is given in anatomy as applied to medicine, in physical and chemical examination, etc. In the University of Edinburgh, a class for instruction in clinical medicine is held in the wards of the Royal Infirmary by the clinical tutor.

**PRACTICAL SURGERY.**—At most of the schools, special provision is made for instruction in this important branch of medical education. The courses embrace such subjects as—the application of anatomy to surgery on the living person or the dead body; the methods of proceeding, and the manipulations necessary, in order to detect the effects of diseases and accidents; the performance of operations on the dead body; the use of surgical apparatus; the examination of diseased structures, as illustrated by preparations and recent specimens. The course of practical instruction is generally distinct from that of systematic surgery, and is in many instances given in the summer session. In the Westminster Hospital, however, besides a summer course, a winter course of practical surgery is given every second year, alternately with the systematic course.

**SPECIAL DEPARTMENTS.**—Due provision is made for instruction in *Midwifery* so as to enable students to meet the requirements of the examining bodies; but we do not call to mind any arrangement in any of the schools demanding special notice.

*Ophthalmic Surgery* is taught by lectures and observation of cases at all the London schools; each hospital receiving ophthalmic patients except the Charing Cross, the pupils of which are admitted to the practice of the Royal Westminster Ophthalmic Hospital. As far as can be gathered from the prospectuses, the material available for the practical teaching of this subject (as far as regards in-patients) is as follows: St. Bartholomew's Hospital, 26 beds; Charing Cross (Royal Westminster Ophthalmic Hospital), 50 beds; Guy's Hospital, 50 beds (also about 2,500 out-patients, and an average of more than 500 operations); London Hospital, 12 beds. The other hospitals have beds for ophthalmic cases, but the number



is not stated. Among the provincial schools, those of the Universities and at Bristol and Newcastle-on-Tyne are the only ones in which there is no special department for teaching ophthalmic surgery. In the Universities of Aberdeen and Glasgow, instruction in ophthalmic surgery is given; and the students are admitted to see the practice of ophthalmic institutions in those cities. In the Extra-academical School of Edinburgh, and in Anderson's College, Glasgow, courses of lectures on the subject are given. In Ireland, provision is made for the teaching of ophthalmic surgery in most of the medical schools of Dublin.

*Aural Surgery* is taught as a special branch at all the London medical schools, and at the Leeds School of Medicine among the provincial schools; also in the Extra-academical School.

*Diseases of the Throat.*—Special instruction in the diagnosis and treatment of diseases of the throat and larynx, and the use of the laryngoscope, is given at St. Bartholomew's Hospital by Dr. Lauder Brunton; at the Charing Cross Hospital by Dr. Irvine; at St. George's Hospital by Dr. Whipple; at King's College Hospital by Dr. Ferrier; at the London Hospital by Dr. Morell Mackenzie, who delivers a course of lectures on the subject; at St. Mary's Hospital by Mr. Norton; at the Middlesex Hospital by Mr. Clark (with Diseases of the Ear); at St. Thomas's Hospital by Mr. Greenfield; at the Westminster Hospital by Dr. Hall; at the Manchester Royal Infirmary by Dr. H. Simpson; and in the Glasgow Royal Infirmary by Dr. E. Watson.

*Diseases of the Skin.*—For the teaching of this important department of medicine, special provision is made in all the London hospitals. Demonstrations of cases are given at stated intervals, generally once a week; and at Charing Cross and Westminster Hospitals short courses of lectures are delivered. In University College Hospital, the special department for cutaneous diseases is under the charge of Dr. Tilbury Fox, who delivers a clinical lecture once a fortnight. There does not appear any special arrangement for imparting a knowledge of the subject in any of the English provincial schools. A course of lectures is given in the Edinburgh extra-academical school. In Dublin, a course of instruction on diseases of the skin is given at the Adelaide Hospital.

*Orthopædic Surgery* is taught at St. Bartholomew's Hospital by Mr. Willett; and also at St. George's Hospital.

*Mental Diseases.*—Lectures on Psychological Medicine are delivered as a separate course in most of the London schools. At St. Mary's, the subject is included in Medical Jurisprudence. Special arrangements for clinical instruction in large asylums is made in several instances; thus, the students of Guy's and St. Thomas's Hospitals are admitted to Bethlem Hospital, those of the London Hospital to Bethnal House, and those of University College to Camberwell House Asylum. Two students of the London schools, qualified to practise, are appointed for six months as resident clinical assistants in Bethlem Hospital. At the Leeds School of Medicine, the students attend the West Riding Lunatic Asylum at Wakefield, where Dr. Major, the medical director, gives clinical lectures in addition to a course of systematic lectures at the school. The pupils of the Liverpool Royal Infirmary School of Medicine have the opportunity of receiving instruction at the Rainhill Asylum, from Dr. Rogers. In Manchester, demonstrations of the various forms of insanity are given by Mr. G. W. Mould. At the

Newcastle-on-Tyne College, instruction in psychological medicine is given by Mr. Wickham, medical superintendent of Coxbridge Asylum. In the University of Edinburgh, Dr. Grainger Stewart, the Professor of Medicine, gives a summer course of Medical Psychology and Mental Diseases, with practical instruction at an Asylum. In the Extra-academical School, a similar course is delivered by Dr. Batty Tuke. In Dublin, special courses of lectures on mental diseases are given in the Richmond, Whitworth, and Hardwicke Hospitals, adjoining which is a large asylum containing over 1000 patients. The lectures on psychological medicine are mostly delivered during the summer session.

*Public Health.*—Special courses of lectures on this subject are given at St. Bartholomew's, Charing Cross, Guy's, the Middlesex, and St. Thomas's Hospitals, and at King's College University. At St. George's Hospital, it is included in the course of Medicine; and at the London, St. Mary's, and Westminster Hospitals, in that on Forensic Medicine. In University College, besides the lectures, instruction in the chemical and microscopic examination of air, water, and food, is given in the hygienic laboratory. In most of the provincial schools the subject is included in the lectures on Forensic Medicine; in the Sheffield Medical School, a course of lectures is given by Dr. Drew, and in the Newcastle College of Medicine by Dr. Armstrong. In Scotland, also, the instruction in Public Health is given in connection with that on Medical Jurisprudence. In Dublin, there is a professorship of Hygiene in the school of the Royal College of Surgeons.

*PRACTICAL PHYSIOLOGY.*—This subject is taught in most of the schools; but more elaborate provision is made in some cases than in others.

At *St. Bartholomew's Hospital*, the course embraces—1. Microscopic Anatomy or Histology; 2. Physiological Chemistry; 3. Physiological Physics. It is conducted by the demonstrators under the superintendence of the lecturers on Physiology and Chemistry. Dr. Klein, assistant-professor in the pathological laboratory of the Brown Institution, gives a course of lectures on General Histology, with demonstrations.

At *Guy's Hospital*, Mr. Golding-Bird gives a course of Histological demonstrations of the elementary tissues and the chief organs of the body, with their behaviour and reagents, as studied with the microscope. The course lasts three months, and is gone through twice in the winter session. In the prospectus of the class, the following useful directions are given.

"The following is the apparatus with which each member of the class must provide himself: a compound microscope, with one or two eye-pieces, an 'inch' and 1-4 in. or 1-5 in. object glasses; a double 'nosepiece' or objective holder, a case for the microscope, a micrometer, an eye-piece indicator, are useful additions; two dozen or more glass slips, 3 × 1 inch; a box of cover glasses ( $\frac{1}{4}$  to  $\frac{1}{2}$  oz. round  $\frac{3}{4}$  in.); a glass rod and pipette; scalpel, forceps, and small scissors; needles set in handles; two razors and strop; camel-hair brushes; small white saucer and two or three watch-glasses; a duster and soft cambric or silk handkerchief. The necessary reagents are supplied by the school, as well as materials for mounting specimens, etc."

The following general rules are laid down for guidance. "1. Adjust the mirror to throw a good light, and carefully wipe the eye-piece from dust.

2. The slip and cover-glass must be free from grease and moisture. 3. Take very little of each tissue. 4. Every object must be seen in a drop of water (or other fluid) large enough to reach the edge of the cover-glass, but not beyond. 5. Avoid air bubbles. 6. In cutting sections, let both razor and object be kept wet. 7. For elements of tissues use high powers, for sections of organs begin with an inch objective. 8. Draw all you see."

A senior class in Practical Physiology, intended for University men and others who have passed through the above course, is held by Dr. Pye-Smith in the summer.

At *University College*, instruction in Practical Physiology is given by Dr. Burdon Sanderson (the Jodrell Professor of Physiology) and Mr. Schäfer. The course of Practical Physiology and Histology consists of practical lessons in Histology and the use of the Microscope, and in Physiological demonstrations. For instruction in Histology, the class is divided into two equal parts, which meets on alternate days. Physiological demonstrations are given from time to time in the laboratory. In addition to the demonstrations, practical instruction is given as required in the application of chemical and physical methods in Physiology.—A course of lectures on Embryology will be given during the summer session by the assistant professor of Physiology. In addition, a series of practical lessons will be given in the laboratory on the subjects treated of in the lectures.—Persons desirous of engaging in original investigation in Physiology or Histology may be admitted to the laboratory as workers on the nomination of the Jodrell Professor.

A course of Practical Elementary Biology, specially adapted to meet the requirements of candidates for the Preliminary Scientific M.B. and for the First B.Sc. Examinations of the University of London, is given during the winter session. The course consists of three parts, viz.:—1. Structure and Life-history of a series of typical animals; 2. Elementary Histology and Physiology; 3. Structure and Life-history of a series of typical plants.

In *Owens College, Manchester*, a very complete course of Practical Physiology is conducted during the summer by Dr. Arthur Gamgee, the Brackenbury Professor of Physiology. Demonstrations are given in regard to the following subjects: the blood; the circulation of the blood; respiration; digestion, absorption, and secretion; physiology of muscle; physiology of nerves and nerve-centres. (A detailed prospectus of the course may be obtained on application at the College).—The Physiological Laboratory is open daily during the winter and summer sessions. It is proposed to admit the following classes of students, viz.:—(a) those who intend to prosecute original researches in Experimental Physiology or Physiological Chemistry under the direction of the professor; and (b) those who desire to devote special attention to Histology.

Very complete arrangements are made for teaching practical physiology in Edinburgh, under Professor Rutherford, and in Glasgow under Professor McKendrick.

**HOSPITAL APPOINTMENTS.**—Numerous appointments at the hospitals are open to the diligent student, without payment (except in the few cases hereinafter noticed) of any fee. For the resident appointments, a qualification to practise is required; and in some instances a salary is paid in addition to the provision of rooms and board.

At *St. Bartholomew's Hospital*, four house-physicians are appointed annually; and each receives a salary of £25. A resident midwifery assistant is appointed every six months; an ophthalmic house-surgeon is also appointed for six months, and may be re-elected. An assistant-chloroformist is appointed annually and receives £25. Clinical clerks to the medical in-patients, and to the physician-accoucheur, also clerks and dressers for the out-patient and special departments, are chosen from among the students. Sixteen dressers for the surgical in-patients are selected each year; and other in-patient dresserships may be obtained on payment of £12 12s. for three months, £18 18s. for six months, or £26 5s. for twelve months.

At *Charing Cross Hospital*, a medical and a surgical registrar are appointed, each with a salary of £40 a year. A resident medical officer and a resident surgical officer are selected by competitive examination every six months from candidates qualified to practise. A resident obstetrical officer, assistant medical officer, and assistant surgical officer, are appointed every six months after examination, preference in each case being given to a legally-qualified man. The clinical clerks, three to each physician and two to each assistant-physician, and the dressers—three to each surgeon and assistant-surgeon, and also two clinical clerks to the physician-accoucheur, are appointed every six months.

At *St. George's Hospital*, house-physicians and house-surgeons are appointed annually. Each pays a deposit of 50 guineas, which is returned if the duties of his office have been satisfactorily performed. A curator of the Pathological Museum and a medical and a surgical registrar, each with a salary of £50; and an obstetric assistant with a salary of £100, are appointed annually. An assistant house-physician, an assistant house-surgeon, and two assistant medical registrars, are appointed every six months; and an ophthalmic assistant and an assistant surgical registrar from time to time. Clinical clerks and dressers are also appointed.

At *Guy's Hospital*, there are appointed during the year 6 senior and 6 junior house-physicians, 6 senior and 6 junior house-surgeons, 12 senior and 12 junior obstetric residents, 24 surgeons' dressers, 18 clinical assistants, 12 dressers in the eye wards, 24 *post mortem* clerks, 24 obstetric out-patient clerks, 32 assistant-physicians' clerks, 12 dental surgeons' dressers, 12 aural surgeons' dressers, 64 medical clinical clerks, 72 or more assistant-surgeons' dressers and dressers in the surgery, 80 surgical clinical clerks, 32 assistant-surgeons' clerks, 72 extern obstetric assistants, and clerks in the room for applying electricity. All students have opportunities of becoming clinical ward clerks to the physicians and surgeons, as well as dressers to the assistant-surgeons and dressers in the surgery; and the diligence with which they perform the duties of these offices is an important test of their fitness for the higher posts.

At *King's College Hospital*, a physician's assistant, two house-surgeons, a physician-accoucheur's assistant, clinical clerks, and dressers, are chosen by examination from matriculated students of the College who are pupils at the hospital.

At the *London Hospital*, every student is expected to act as clinical clerk to the medical out-patients for six weeks in his second year, and to dress for three months in the surgical out-patient department; also to act as *post mortem* clerk for three months. The following appointments are also made; five house-physicians (qualified for registration) every six



months; clinical clerks (open to all full pupils) every three or six months; a resident accoucheur (qualified) every six months; four house surgeons, for six months; surgical dressing pupils, three clinical assistants (each with a salary at the rate of £80 *per annum*), a medical and a surgical registrar (each with £100 *per annum*), a dental assistant, and ophthalmic and aural dressers.

At *St. Mary's Hospital*, three resident medical officers are appointed for twelve months, and a resident obstetric officer for six months. All students are required to perform the duties of clinical clerk and dresser for six months after passing the primary examination. Students of the third year are expected to assist in the out-patient department for three months.

At the *Middlesex Hospital*, the house-surgeons, resident physicians' assistants, and resident surgeons' assistants pay, on appointment, fees varying from ten to twenty guineas, according to circumstances. The appointments of clinical clerks and dressers are so arranged that every student may at some period hold both a clerkship and a dressership.

At *St. Thomas's Hospital*, two house-physicians and two assistant house-physicians, two house-surgeons and two assistant house-surgeons, and a resident accoucheur, are selected from students holding qualifications. An ophthalmic assistant, with a salary of £50, is also appointed. Clinical clerks and dressers to in- and out-patients are selected from pupils, to the number in all of 80 or 90, each year. Two registrars, at an annual salary of £40 each, are chosen from third or fourth years' students. There are also numerous minor appointments of anatomical assistants, prosectors, obstetric clerk, etc., open to students.

In *University College Hospital*, physicians' assistants, house-surgeons, midwifery students, physicians' clerks, surgeons' dressers, ward-clerks, and ophthalmic surgeon's assistants, are selected from among the pupils who are also students of the College. The physicians' assistants, obstetric assistant, and house-surgeons, pay for their board in the hospital.

At the *Westminster Hospital*, a medical and a surgical registrar are appointed annually, each with a salary of £40. A house-physician, house-surgeon, and resident obstetric assistant, are appointed for six months; each is required to pay a deposit of £20, but receives £25 at the expiration of his term of office if the duties have been performed satisfactorily. The following are selected by competition; assistant house-surgeon, physicians' assistant, surgeons' assistant, ophthalmic assistant, assistant in the skin and aural departments, and in-patients' clerks and dressers. All students are expected to act in rotation for three months as clerks and dressers in the out-patient department.

In the *Birmingham General Hospital*, a resident medical and a resident surgical assistant, and two resident dressers, are appointed, each for six months.

At the *Queen's Hospital, Birmingham*, a resident obstetric assistant is appointed every six months, and a resident dresser every three months.

At the *Bristol Royal Infirmary*, each physician appoints a clinical clerk. The surgeons' dressers, when sufficiently qualified, reside in the hospital in weekly rotation, and act under the supervision of the house-surgeon. The dressers pay the following fees (in addition to those for hospital practice): for one year, £12 12s.; for two years, £21; for three years, £26 5s. A pathological clerk is appointed every

three months. Apprentices to the house-surgeon are received for five years, and pay a fee of £315, which includes residence and hospital practice, but not dressership. House-pupils are also admitted at the rate of £52 10s. *per annum*, with a fee of £52 10s. to the house-surgeon.

At the *Bristol General Hospital*, clinical clerks, dressers, and obstetric clerks are appointed. The clinical clerks and dressers pay each an extra fee of £5 5s. for six months; and the obstetric clerks £3 3s. for three months. Resident pupils are received, and pay £100 for the first year, and £60 for each subsequent year; or £260 for five years.

In the *Leeds General Infirmary*, all students must hold the office of clinical clerk and dresser. A house-physician and house-surgeon are elected from time to time. There are four resident assistants; two are elected every six months, and hold office for one year.

At the *Liverpool Royal Infirmary*, two house-physicians and three house-surgeons are selected (by competitive examination if necessary) from pupils of the school who have obtained a qualification to practise, and hold office for six months. Three clinical clerks are appointed to each physician, and three or more dressers to each surgeon, who hold office for three months. *Post mortem* clerks are appointed for periods of six weeks. This appointment is required to be held by every student.

At the *Manchester Royal Infirmary*, a senior house-surgeon, two junior house-surgeons, a house-physician, and four physicians' assistants, are appointed in each year. The senior house-surgeon and house-physician hold their appointments for twelve months; the other officers for six months. All receive board, residence, and salary. Clinical clerks and dressers are appointed for three months; and accident-room dressers for two months.

In the *Newcastle-on-Tyne Infirmary*, four resident dressers are appointed twice a year; each pays a fee of £10 10s. for six months. Two assistants to the pathologist are appointed in May and December.

In the *Edinburgh Royal Infirmary*, four resident physicians and four resident surgeons are appointed for six months. Clinical clerks are also appointed; and each surgeon appoints several dressers for six months. There are also assistants in the pathological department.

In the *Glasgow Royal Infirmary*, five physicians' and five surgeons' assistants, who are boarded and lodged in the Hospital at the rate of £25 *per annum*. The appointments can be held for twelve months, six in the medical and six in the surgical wards. These appointments are open to students who have passed all their examinations except the last, or to qualified gentlemen. There are also numerous clerkships and dresserships.

**TUTORIAL INSTRUCTION.**—In addition to the ordinary courses of lectures and hospital practice, and practical instruction, many of the medical schools have an officer whose special duty it is to direct the pupils in their studies, and to hold classes for the guidance of those who are about to present themselves for examination before the licensing boards.

At *St. Bartholomew's Hospital*, it is one of the duties of the warden to direct the studies of the resident students; but it is recommended that all students should seek his advice in questions relating to education. Students preparing for examinations

are examined in classes by the lecturers, demonstrators, and medical tutors.

At *Guy's Hospital*, the medical and surgical registrars, and the demonstrators of Anatomy and Chemistry, assist pupils in their studies, and prepare them for their examinations by special class instruction, throughout both sessions. Special classes are held for the assistance of students preparing for the Preliminary Scientific and First M.B. examinations of the University of London.

At *King's College*, a medical tutor assists by instruction and examination, all students, in the subjects of the lectures of their first winter and summer session, as well as those preparing for the Preliminary Scientific Examination of the University of London.

In the *London Hospital*, special attention is paid to the preparation of students for their examinations at the Colleges of Physicians and of Surgeons, the Apothecaries' Hall, and the University of London. Students are also prepared for the Matriculation, Preliminary Scientific, and First B.Sc. examinations of the University of London.

At *St. Mary's Hospital*, the medical tutor guides the students in their clinical studies, and gives practical examinations to those who are preparing for their final examinations.

In the *Middlesex Hospital*, the college tutor assists all general students, especially those who are preparing for their primary examination before any of the licensing boards; and his classes are arranged with a view to obviate the necessity of obtaining private teaching apart from that of the Medical School.

At *St. Thomas's Hospital*, classes are held for the preparation of students for the Preliminary Scientific and First M.B. examinations of the University of London.

In *University College*, gentlemen who desire assistance in their studies may obtain the same within the College on application to the respective professors.

At the *Westminster Hospital*, a tutorial staff will hold frequent *viva voce* and written examinations, to aid the students in their work and in preparations for examination. Special classes will be formed for the assistance of students preparing for the examinations of the University of London.

In the *Queen's College, Birmingham*, there is a medical tutor, who holds classes for junior students throughout the winter and summer sessions. Special classes are also held for the examinations of the University of London.

In the *University of Durham College of Medicine*, at Newcastle-on-Tyne, a medical tutor assists the pupils in their studies and in preparing for examination.

**SCHOLARSHIPS, EXHIBITIONS, AND PRIZES.**—In addition to the rewards for diligence in professional study, many of the medical schools offer yearly one or more scholarships, usually in general literature, and in some instances in science. The competition is open to gentlemen about to commence their hospital studies; and the successful candidate is expected to enter as a pupil of the school in which the examination has been passed. In the examination in general literature, the subjects are usually those of preliminary education as defined by the General Medical Council, or of the Matriculation Examination of the University of London. In the Science scholarships, the usual subjects are Chemistry, Bot-

any, and Zoology. The yearly value of the scholarships and exhibitions varies from £100 to £10.

There are also many scholarships and exhibitions, varying in value from £100 to £20, open to students during their period of professional study, or (as at St. George's Hospital) within a limited time after they have passed their final examinations for licences to practise. These exhibitions are in some cases (as at St. Bartholomew's and the London Hospitals) awarded after examination in subjects of preliminary education; but in most of the schools they are given after examination in groups of subjects of professional education, elementary or practical.

Special rewards are also offered in many of the schools for evidence of proficiency in clinical observation.

For further information respecting the scholarships and exhibition, and regarding the class prizes, as well as for many details which we are obliged to omit, our readers must consult the prospectuses of the schools and our advertising columns.

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## MEDICAL EDUCATION IN FRANCE.

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A CANDIDATE for a degree in Medicine of the University of France must, when he enters on his medical studies, have attained his eighteenth year, and produce a certificate of his birth, duly legalised, and, if he be a minor, the consent of his father or guardian for the step he is taking. He must, likewise, be furnished with a certificate of his personal respectability (*bonne vie et mœurs*), and, if he be a minor, and his father or guardian do not live in town, he must find a surety. A course of study of four years is necessary before the student can be admitted to examination for the degree of Doctor of Medicine, or of Medicine and Surgery. The student must enter in November, when the scholastic year begins. On lodging the above papers with the Secretary of the Faculty, together with the diploma of *bachelier-ès-lettres*, he must enter his name, etc., in a register kept for that purpose, and is given a *carte d'inscription*. He renews his inscription every quarter, until he has taken out sixteen inscriptions.

At the end of the first three years of study, the students have to submit to a series of preliminary examinations, termed *examen de fin d'année*, which is divided into three parts, and which may be passed at once or in the course of three years. The first comprises physics, chemistry, and natural history, considered in their applications to medicine; the elements of anatomy (osteology, articulations, myology), and the elements of physiology in all their parts; and the third consists of medical and surgical pathology. By the end of the third year, if he have not done so before, the foreign as well as the French student must produce the diploma of *bachelier-ès-sciences* in the French University, for which he is examined in physics, chemistry, and natural history. For British students, however, the degree of Bachelor of Arts, or a certificate of having passed the matriculation examination of any of the Universities of great Britain, would be accepted as equivalent to the French degree, for which latter the cost is 50 francs, or 2*l.* of English money. The examinations of the *fin d'année* take place in July of the first, second, and third scholastic years on the subjects mentioned above; failing in any of which



and in another trial in November, the student cannot present himself again for examination, nor take out another inscription, till after the lapse of a year. From the eighth to the sixteenth inscription, the student must attend a hospital. At the end of the fourth year he can go in for the final examinations for the doctorship, termed *examens de réception*. These consist of five parts, and after them a thesis. The following are the subjects of the five examinations for the doctorship:—

1. Anatomy and physiology, with dissection.
2. Medical and surgical pathology, operative surgery, operations on the dead body.
3. Medical natural history, medical physics, medical chemistry, pharmacology.
4. Hygiene, forensic medicine, materia medica, therapeutics.
5. Clinical medicine and surgery, and accouchements.

The last examination is strictly practical. Three cases (one of each in medicine, surgery, and accouchements) in the hospital are selected, of which the diagnoses, prognoses, and treatment are expected to be given.

The thesis consists of a dissertation in French, printed at the expense of the candidate, on a subject selected by him in medicine or surgery. The candidate has then to undergo a *viva voce* examination on the subject of his dissertation, and on fourteen questions drawn by lot, corresponding to the fourteen branches of medical science taught at the school, and which are printed at the end of the thesis.

The candidates are examined in French, *viva voce*, and one after the other, in the alphabetical order of their names, for three-quarters of an hour at each examination, before a board composed of a president and two or three members, all of whom are professors or professors *agrégés* of the faculty.

Before going up, however, for the examination of the thesis, the candidate should submit at the secretary's office a certificate of the right to pass the examination, which he should obtain from the Minister of Public Instruction, and at the same time deposit the price of his diploma and thesis in manuscript. He then selects a professor, whose duty will be to examine the thesis; and, if there be nothing objectionable in it, the thesis is consigned to the printer.

In the event of the candidate being rejected, another trial is generally allowed at the end of three months.

For the degree of Doctor in Surgery, the candidate will have to submit to a further examination.

The fees, which are fixed by law, amount in all to 1,272 francs, or about 53*l*. The expense of a medical education in Paris is thus trifling, compared with that of the British Schools.

Certificates of medical studies in a foreign faculty are taken in France in deduction of those required for a degree; and with regard to the degree of *bachelier-ès-sciences*, if the foreign student have obtained a similar degree in his own country, he can apply to the Minister of Public Instruction for a dispensation. The holder of a foreign diploma wishing to obtain a French diploma has to submit to the examinations established for the doctorship; but the minister can relieve him from the preliminary examinations termed *examens de fin d'année*. The candidate will, however, be required to pay the fees.

## FACULTY OF MEDICINE IN PARIS.

THE School of Medicine in Paris is open not only to the French public, but to all who wish to attend the courses and take degrees. Great facilities are afforded to British and foreign students for the prosecution of their studies, all lectures being given gratuitously, and no payment being required for hospital attendance. For dissections, however, a payment of 30 francs or more is expected from each student.

The medical sessions begin for winter on October 15th, and for summer on April 15th, of each year.

The instruction in the Faculty of Medicine in Paris is given by the following professors: M. Sappey, Anatomy; M. Robin, Histology; M. Béclard, Physiology; M. Wurtz, Medical Chemistry; M. Baillou, Natural History; M. Gavarret, Medical Physics; M. Regnaud, Pharmacology; MM. Jacoud and Peter, Internal Pathology or Medicine; M. Trélat, External Pathology or Surgery; M. Le Fort, Practical Surgery; M. Gubler, Materia Medica and Therapeutics; M. Charcot, Pathological Anatomy; M. Pajot, Midwifery; M. Bouchardat, Hygiene; M. Tardieu, Forensic Medicine; M. Chauffard, General Pathology and Therapeutics; M. Vulpian, Comparative and Experimental Medicine; MM. G. Sée, Lasègue, Hardy, Potain, Clinical Medicine; MM. Gosselin, Richet, Broca, Verneuil, Clinical Surgery; M. Depaul, Clinical Midwifery; M. Parrot, History of Medicine; M. Ball, Diseases of the Mind and Nervous System. Supplementary courses are also given on Ophthalmology (M. Panas); and Diseases of the Skin, Diseases of Children, Venereal Diseases (M. Fournier).

The Faculty of Medicine possesses laboratories of Chemistry, Physics, Physiology, Experimental Pathology, Histology, and Pathological Anatomy.

Besides the professors in the Faculty, there are in Paris a number of lecturers on various branches of medicine. Among them may be mentioned, M. Fort, who gives instructions in Anatomy; MM. Desmarres, Fano, Galezowski, and De Wecker, who lecture on Ophthalmology; M. Dareste, on Embryology; M. Dujardin-Beaumetz, on Therapeutics; M. Jolyet, on Experimental Philosophy, etc.

OTHER SCHOOLS OF MEDICINE IN FRANCE.—There are also Faculties of Medicine, in which complete courses of medical instruction are given, at Lyons, Montpellier, and Nancy. At Lyons, the Medical School, which until lately was a "preparatory" one, has been organised into a combined Faculty of Medicine and Pharmacy, with the following staff of Professors: M. Renaut, General Anatomy and Histology; M. Monoyer, Medical Physics; M. Glénard, Medical and Pharmaceutical Chemistry; M. Chauveau, Experimental and Comparative Medicine; MM. Teissier and Lépine, Clinical Medicine; MM. Ollier and Desgranges, Clinical Surgery; M. Bouchacourt, Clinical Midwifery; M. Gayet, Clinical Ophthalmology; M. Gailleton, Clinic of Diseases of the Skin and Syphilis; M. Rollet, Hygiene; M. Gromier, Forensic Medicine and Toxicology; M. Paulet, Anatomy; M. Cauvet, Materia Medica; M. Lortet, Natural History; M. Picard, Physiology; M. Pierret, Pathological Anatomy; M. Mayet, General Pathology and Therapeutics; M. Boudet, Internal Pathology; M. Berne, External Pathology; M. Léon Tripiet, Operative Surgery; M. Arthaud, Clinical Psychology; M. Soulier, Therapeutics; M. Crolas, Pharmacy; M. Letiévant (*adjoint*), External Pathology; M. Rambaud (*adjoint*),

Clinical Medicine. Complementary courses are to be given by M. Laroyenne, Diseases of Women; M. Perroud, Diseases of Children; M. Tripier, Internal Pathology; M. Fochier, Clinical Surgery of Children; M. Delore, Midwifery; M. Dron, Diseases of the Skin and Syphilis.

In addition to the Faculties of Medicine, there are Preparatory Schools of Medicine in several towns.

## MEDICAL EDUCATION IN GERMANY.

In the German empire there are twenty Universities which possess a Medical Faculty and grant degrees in Medicine; viz., those of Berlin, Bonn, Breslau, Erlangen, Freiburg im Breisgau, Giessen, Göttingen, Greifswald, Halle, Heidelberg, Jena, Kiel, Königsberg, Leipzig, Marburg, Munich, Rostock, Strasburg, Tübingen, and Würzburg.

Each of the Faculties of an University, of which there are generally four—Theology, Law, Medicine, and Philosophy—consists of professors, who are divided into ordinary and extraordinary, and *privat-docenten* or teachers. The professors are appointed for life by the Government, on the nomination of the Faculty; the candidate nominated being frequently selected from among the professors or teachers in some other University than that in which the vacancy occurs. The ordinary professors receive salaries paid by the state or by the University, as well as fees from students. The extraordinary professors for the most part have no fixed salary, but receive merely the fees from the students attending their classes. Nearly all the professors give three courses of lectures and practical instruction during both the winter and summer sessions. The *privat-docenten*, or private teachers, must be doctors of medicine; they are nominated by the Faculty, after passing an examination. They have to give courses of lectures in some subject in the branch of study to which they were appointed. They have no fixed salary, but receive the fees paid by the students attending their lectures, which are officially recognised, and are given in the University. The extraordinary professors are selected from their number.

The preceding remarks are applicable to the Universities of Austria as well as to those of Germany proper. Every student, before being admitted to the study of medicine, has to go through a course of education at a gymnasium or *Realschule*, and pass an examination in classics, mathematics, etc. The degree of Doctor of Medicine, when obtained, does not entitle the holder to practise medicine. For this, the *staats-examen* has to be passed. The detailed regulations of some of the Universities, quoted below, will serve to give a general idea of the system followed in granting degrees.

### UNIVERSITY OF BERLIN.

FOR the degree of doctor, the candidate must have studied medicine in the University at least three years, and must pass an examination and present a thesis. Foreigners may obtain the degree of Doctor of Medicine under the following conditions. The candidate must produce attested evidence that he

has had a scientific education, and has studied medicine during four years. He is examined in Anatomy, Physiology, Chemistry, General and Special Pathology and Therapeutics, Surgery, Materia Medica, Pathological Anatomy, and Midwifery. He must lay before the Faculty of Medicine a dissertation on some medical subject, which is printed at his expense; and must defend it and a series of medical theses. The examinations and the disputation are carried on in German or Latin. The fees amount to about £22 of English money.

The Medical Faculty of this University consists of the following Professors, with between forty and fifty *doctors* or private teachers. *Ordinary Professors*: B. von Langenbeck, Surgery and Clinical Surgery; K. B. Reichert, Anatomy; A. Bardeleben, Surgery and Clinical Surgery; R. Virchow, Pathology; F. T. Frerichs, Medicine and Clinical Medicine; E. Du Bois-Reymond, Physiology; A. Hirsch, Medicine and Epidemiology; E. Leyden, Medicine and Clinical Medicine; C. Schröder, Obstetrics and Gynaecology; O. Liebreich, Materia Medica and Chemistry; C. Schweigger, Diseases of the Eye and Ophthalmic Clinic; C. Westphal, Psychology and Psychiatric Clinic. *Extraordinary Professors*: E. Hensch, Diseases of Children; E. Gurlt, Practical Surgery; C. Liman, Forensic Medicine; C. Skrzeczka, Hygiene; J. Meyer, Medicine; R. Hartmann, Anatomy; G. Lewin, Dermatology and Syphilology; H. Jacobson, Medicine; E. Albrecht, Dental Surgery; H. Munk, Physiology; L. Waldenburg, Physical Diagnosis; A. Lucae, Aural Surgery; E. Salkowski, Chemistry; G. Fritsch, Physiology; O. Fränzel, Medicine; H. Senator, Diseases of Children; F. Busch, Surgery; H. Kronecker, Physiology. The following professors also give instruction in subjects connected with medicine in the Philosophical Faculty; *Ordinary Professors*: A. Braun, Botany; H. Helmholtz, Physics; W. Peters, Zoology; A. W. Hofmann, Chemistry; *Extraordinary Professors*: F. L. Sonnenschein, Chemistry; A. Garcke, Botany; L. Kuy, Botany; P. Ascherson, Botany; E. von Martens, Zoology.

The institutions for clinical treating connected with the University are: Professor von Langenbeck's Clinic for Surgery and Ophthalmic Surgery; the University Polyclinic; the Ophthalmic Polyclinic (Dr. Schweigger); the Obstetric Clinic; and in the Charité Hospital, the Medical Clinic (Dr. Frerichs), the Clinic for Elementary Medical Instruction (Dr. Leyden), the Surgical Clinic (Dr. Bardeleben), the Ophthalmic Clinic (Dr. Schweigger), the obstetric clinic, and the clinics for diseases of the skin and syphilis, for diseases of children, and for diseases of the mind and nervous system. The pathological institute is under the direction of Professor Virchow; the physiological laboratory under that of Professor Du Bois-Reymond; and the chemical laboratory under that of Professor Hofmann.

In this university, the great source of attraction to students for many years past has been the teaching of pathology. The Pathological Institute, which owes its existence in its present form to Professor Virchow, has been under his direction for more than twenty years. It has served as the model for numerous similar institutions in Germany and elsewhere, and among those who have been Virchow's assistants, are to be found many well known teachers of pathology in the other universities—e.g., Cohnheim in Breslau, Ponfick in Göttingen, Von Recklinghausen in Strasburg, etc.

The institute, situated within the grounds of the



Charité Hospital, contains a lecture theatre, a room for demonstrations, a museum, a chemical laboratory, a histological laboratory, a suite of rooms for the *post mortem* examinations, private rooms for the professor and his assistants, while in the basement floor there are kept animals for experiment.

Three times in the week Professor Virchow gives demonstrations of pathological anatomy. One out of three days in the week is devoted to demonstration at the *post mortem* table; and this is an opportunity of obtaining instruction of which every student should be careful to avail himself. When the session is considerably advanced, Virchow relegates this work to his senior assistant, who carries it out with the same care and elaborateness. The ordinary *post mortem* examinations are made throughout the forenoon, and are chiefly attended by those who have followed the clinical history of the cases. The material from them is reserved for demonstration by the professor. The demonstrations take place in a large room, with tables specially arranged for the purpose, the specimens being placed on wooden trays and circulated among the students. The professor usually commences with an important specimen or group of organs from one case, on which he expatiates for a considerable time, the remaining specimens being despatched in quick succession.

On the three days of the week not devoted to demonstration, a course of pathological histology is given by one of the assistants, under Virchow's direction. It has been found that many students come to the Pathological Institute imperfectly grounded in normal histology, and, on this account, courses of instruction in the microscope are given.

In addition to his demonstrations, Professor Virchow lectures on four days of the week on general pathology.

Every encouragement is given to students who are desirous of working out, in the laboratory of the institute, any special point in pathology. A library of books of reference is available, and a place in the laboratory will, if possible, be assigned to the student free of charge. It will be found more convenient for the student to have his own microscope. The chemical laboratory is also open to students, for researches or for exercises in physiological and pathological chemistry, under the direction of Professor Salkowski; a fixed charge per session (£3 or £4) being made to cover the cost of material.

During the winter session, 1876-77, 281 students attended the medical faculty of this university.

#### UNIVERSITY OF BONN.

THE following are the Professors in the Medical Faculty of this University. *Ordinary Professors*: C. Binz, Materia Medica; W. Busch, Surgery; C. Köster, Pathology; Baron A. von La Valette St. George, Anatomy and Histology; F. von Leydig, Comparative Anatomy; E. Pflüger, Physiology; H. Rühle, Medicine; T. Sämisch, Diseases of the Eye; G. Veit, Gynaecology and Forensic Medicine. *Extraordinary Professors*: J. Doutrelepon, Surgery; C. von Mosengeil, Surgery; F. Obernier, Diseases of Children; H. Schaaffhausen, Anatomy and Histology; N. Zuntz, Anatomy and Histology. Instruction is also given in the Philosophical Faculty by—*Ordinary Professors*: F. H. Troschel, Zoology; J. Hanstein, Botany; and A. Kekulé, Chemistry.

Connected with the University are medical, surgical, obstetric, and ophthalmic clinics; and anatomi-

cal, physiological, pathological, pharmacological, and chemical institutes.

In the winter session 1876-77, 118 students attended the Medical Faculty of this University; and 139 in the summer session of this year.

#### UNIVERSITY OF Breslau.

THE following Professors belong to the Medical Faculty of this University. *Ordinary Professors*: A. Biermer, Medicine; J. Cohnheim, Pathology; H. Fischer, Surgery; H. Förster, Ophthalmology; H. Häser, Materia Medica and Therapeutics; C. Hasse, Anatomy; R. P. H. Heidenhain, Physiology; O. Spiegelberg, Obstetrics and Gynaecology. *Extraordinary Professors*: L. Auerbach, Comparative Anatomy; H. Cohn, Ophthalmology; W. A. Freund, Gynaecology; H. Frieberg, Forensic Medicine and Public Health; R. Gscheidlen, Physiology and Physiological Chemistry; K. I. Klopsch, Surgery; H. Köbner, Diseases of the Skin and Syphilis; H. Neumann, Psychological Medicine; E. Richter, Surgery; R. Voltolini, Diseases of the Ear. There are also about fifteen private teachers. Instruction is also given in the Philosophical Faculty on subjects connected with medicine by—*Ordinary Professors*: C. J. Löwig, Chemistry; H. R. Göppert, Pharmacology; A. E. Grube, Zoology; T. Poleck, Chemistry in its Pharmaceutical, Forensic, and Hygienic Apparatus; F. Cohn, Botany.

The number of students attending the Medical Faculty of this University in 1876-77 was 177; and in the last summer session 171.

#### UNIVERSITY OF ERLANGEN.

THE following are the regulations to be observed by candidates for the degree of Doctor of Medicine in this University.

1. Candidates for the degree of Doctor must announce their intention to the Dean of the Faculty of Medicine, and present the following documents: *a*. Evidence of having gone through the curriculum in a German gymnasium, or proof of equivalent general education; *b*. Proof of having studied medicine in one of the German Universities or in a corresponding foreign medical school during at least three years; *c*. A Thesis, composed by the candidate, on some subject in medicine or natural science, with a written declaration, on word of honour, that the work is absolutely the candidate's own.

2. If the dissertation be judged by the Faculty to be of sufficient merit, the candidate is admitted to an oral examination, which is conducted in the German language. It may take place in two forms; *a*. As a colloquy, in the case of those who have passed an examination in medicine before a German examining board; *b*. As an extended examination on all departments of medical science, in the case of those who have not passed an examination before a German board.

3. After the conclusion of the oral examination, the examiners decide on the result. If the decision be favourable, the degree of Doctor is at once conferred, the fact being communicated to the candidate by the dean, and his diploma issued to him.

4. The candidate, if his dissertation be approved, must have it printed at his own expense. At the back of the title-page it must be stated that the dissertation is printed with the consent of the Faculty; and the name of the reporter (*referent*) must be given.

5. The candidate must pay a fee of 300 marks (equal to about 15*l.* 10*s.*) for the granting of the Doctor's degree, and must also deliver 100 copies of his dissertation to the Faculty.

6. If the candidate fail to pass the examination, half of the fee is returned to him.

The Medical Faculty of this University consists of the following professors and teachers. *Ordinary Professors*: J. Gerlach, Anatomy; F. A. Zenker, Pathology; W. Heineke, Surgery; I. Rosenthal, Physiology; W. O. Leube, Medicine; J. Michel, Ophthalmology; P. Zweifel, Midwifery. *Extraordinary Professors*: H. Trott, Materia Medica; A. Wintrich, Medicine; F. W. Hagen, Psychological Medicine; W. Filehne, Materia Medica and Therapeutics. Instruction in subjects connected with medicine is also given in the Philosophical Faculty. *Ordinary Professors*: E. von Gorup-Besanez, Chemistry; M. Reess, Botany; A. Hilger, Pharmacy and Chemistry.

In connection with the University are the following institutions: the University Hospital, with medical, surgical, obstetric, psychiatric, and ophthalmic clinics; an anatomical, a physiological, and a pathological institute.

The number of students in the Medical Faculty of this University in the winter session 1876-77 was 162; and in the summer session lately ended 98.

#### UNIVERSITY OF FREIBURG.

THE Medical Faculty of the University of Freiburg im Breisgau (Baden) is thus constituted. *Ordinary Professors*: K. H. Baumgärtner, pensioned; A. Ecker, Human and Comparative Anatomy; K. Hecker, pensioned; L. von Babo, Chemistry; O. Funke, Physiology; R. Maier, Pathological Anatomy and State Medicine; A. Hegar, Midwifery; F. Hildebrand, Botany; W. Manz, Ophthalmology; Ch. Bäumler, Materia Medica and Medicine; G. F. L. Thomas, Materia Medica and Medicine; H. Maas, Surgery. *Extraordinary Professors*: A. Schinzinger, Surgery; R. Kaltenbach, Midwifery; J. Latschenberger, Physiology; R. Wiedersheim, Anatomy and Histology. There are also four or five *privat-docents*.—In the Philosophical Faculty, lectures on subjects connected with medicine are given by Professors A. Weismann in Zoology, and A. Claus in Chemistry.

The University library contains 250,000 volumes. There are a chemical laboratory and institutions for the practical study of anatomy, pathology, physiology, etc.; and medical, surgical, obstetric, and ophthalmic clinics.

The number of medical students attending the University in the winter session 1876-77 was 128; and in the summer of 1877, 134.

#### UNIVERSITY OF GIESSEN.

THE following are the professors in the Faculty of Medicine in this University. *Ordinary Professors*: A. Wernher, Surgery; J. Wilbrand, Forensic Medicine and Hygiene; R. Buchheim, Materia Medica; C. Eckhard, Physiology; G. Pflug, Medicine; F. Kehrer, Obstetrics and Gynecology; M. Perls, Pathology; — Sattler, Ophthalmology. *Extraordinary Professor*: F. Birnbaum, Midwifery. There are also three *docents*. In the Philosophical Faculty, subjects connected with medicine are taught by *Ordinary Professors*: H. Will, Chemistry; H. Hoffmann, Botany; A. Schneider, Zoology; *Ex-*

*traordinary Professors*: A. Naumann, Chemistry; A. Laubenheimer, Chemistry.

The University Library contains 140,000 volumes. There are an academical hospital, a lying-in institution, a chemical laboratory, a physiological and a pathological institute.

The number of students attending the Medical Faculty in 1876-77 was 84.

#### UNIVERSITY OF GÖTTINGEN.

THE Medical Faculty of this University consists of the following professors, with five private teachers. *Ordinary Professors*: C. F. H. Marx, Materia Medica; F. Wöhler, Chemistry; W. Baum, Surgery; J. Henle, Anatomy; C. E. Hasse, Medicine; G. Meissner, Physiology; H. Schwartz, Midwifery and Diseases of Women; L. Meyer, Psychological Medicine; Th. Leber, Ophthalmology; W. Ebstein, Medicine; W. Marmé, Materia Medica; F. König, Surgery; E. Ponfick, Pathology; H. Eichhorst, Medicine; *Extraordinary Professors*: W. Himly, Physiology and Forensic Medicine; E. F. W. Herbst, Physiology; A. Krämer, Medicine, and Diseases of the Skin and Syphilis; W. Krause, Forensic Medicine; C. F. Lohmeyer, Surgery; T. Husemann, Materia Medica and Toxicology. In the Philosophical Faculty, instruction is given by — *Professors*: A. Grisebach, Botany; F. Ehlers, Zoology; H. Hübner, Chemistry. *Extraordinary Professors*: H. A. L. Wiggers, Pharmacy; C. Boedecker, Physiological Chemistry; L. von Uslar, Organic and Pharmaceutical Chemistry.

The following institutions are connected with the Medical Faculty; institutions for teaching animal and vegetable physiology, and pharmacology, and pathology; the Ernst-August hospital; a lying-in hospital; a psychiatric clinic in the Lunatic Asylum; a chemical laboratory; and a veterinary institute.

The number of students attending the Faculty of Medicine in 1876-77 was 122; and in the summer session of 1877, 101.

#### UNIVERSITY OF GREIFSWALD.

THE Medical Faculty of this University consists of the following professors and teachers. *Ordinary Professors*: J. Budge, Anatomy; H. C. A. Pernice, Midwifery and Diseases of Women and Children; F. Grohé, Pathological Anatomy; F. Mosler, Pathology and Therapeutics; C. Hüter, Surgery; L. Landois, Physiology; R. Schirmer, Ophthalmic Surgery; A. Eulenburg, Materia Medica. *Extraordinary Professors*: C. Eichstedt, Midwifery, and Diseases of the Skin and Syphilis; W. Häckermann, Forensic Medicine and Hygiene; R. Arndt, Psychology and Nervous Diseases; P. Vogt, Surgery. There are also seven *docents*. Instruction is given in the Philosophical Faculty in Botany, by Professor A. H. A. J. Münter; Chemistry, by Professors Limpricht and Schwanert; Comparative Anatomy and Zoology, by Professor A. Gerstäcker; Physiological Chemistry, by Extraordinary Professor F. Baumstark.

The University Hospital contains medical, surgical, ophthalmic, and obstetric clinics.

The number of students attending the Medical Faculty in 1876-77 was 222; and 228 in the summer session lately ended.

#### UNIVERSITY OF HALLE.

THE following professors, with eight private teachers, constitute the Medical Faculty of this University.



*Ordinary Professors*: J. Vogel, Medicine; L. Krahmer, *Materia Medica* and Forensic Medicine; Th. Weber, Medicine; R. Olshausen, Obstetrics and Gynæcology; Th. Ackermann, Pathology; H. Welcker, Anatomy; R. Volkmann, Surgery; J. Bernstein, Physiology; A. Gräfe, Ophthalmology; F. E. W. Steudener, Histology. *Extraordinary Professors*: H. Schwartz, Diseases of the Ears; O. Nasse, Physiology; H. Köhler, *Materia Medica* and Toxicology; M. Köppe, Psychological Medicine; E. Kohlschütter, Medicine. In the Philosophical Faculty, instruction in sciences connected with Medicine is given by—*Professors* W. H. Heintz, Chemistry; C. Giebel, Zoology; G. Kraus, Botany.

The University Library contains 100,000 volumes. Connected with the University are a chemical laboratory, a botanical garden, a zoological museum, an anatomical theatre and zootomical museum, a lying-in institution, a medico-chirurgical hospital, and physiological, pathological, and pharmacetical laboratories.

In 1876-77 the number of students in the Medical Faculty was 114. In the recent summer, the number was 95.

#### UNIVERSITY OF HEIDELBERG.

The following are the regulations to be observed for graduation in medicine in this University.

1. In applying for examination for the degree of Doctor, no evidence of a previous course of study is required.

2. The same demands are made of all candidates; the only difference is that the oral examination is shortened if evidence be produced that the candidate has undergone, in the German empire, the *Staats-examen* for license to practise.

3. The subjects of examination are (1) Anatomy; (2) Physiology; (3) Pathological Anatomy; (4) *Materia Medica* (Pharmacognostics, Pharmacodynamics, and Toxicology); (5) Medicine; (6) Surgery; (7) Midwifery; (8) Ophthalmic Surgery.

4. A candidate may select one of these as the principal subject of his examination. All the other subjects then become secondary.

5. The examination is oral and written. The oral examination can only be conducted in the German language.

6. The written part of the examination consists of a medical dissertation in German or Latin, which must be given in before the oral examination. The dean of the Faculty of Medicine delivers the dissertation (or a scientific publication by the candidate, which may be substituted for it) to a reporter for his opinion. The reporter is authorised to hold a conversation with the candidate on the subject treated of in the work. In voting on the dissertation, the question is put whether it shall be allowed to be printed. If it be printed, the names of the dean for the time being, and of the reporter, must appear on the title-page.

7. The oral examination comprises the principal subject chosen by the candidate, and a certain number of the secondary subjects. The number and selection of the secondary subjects vary, according as the state-examination has or has not been passed. If proof be given that a state-examination has been passed in the German Empire, the candidate is examined in the principal subject, and in three of the secondary subjects, selected by himself. If there be no proof of a state-examination, he is examined in five secondary subjects. Of these, three are fixed—

Anatomy, Physiology, and Pathological Anatomy; the other two may be chosen by the candidate. But if one of the three fixed subjects be chosen by the candidate as the principal subject, its place as a secondary subject is taken by another, selected by the candidate.

8. The duration of the oral examination depends on the number of subjects. The candidate is examined on the principal subject for thirty minutes, on each secondary one for fifteen to twenty minutes, according to the judgment of the examiners.

9. On the result of the entire examination, three notes are granted. The first (*summâ cum laude*) can only be granted when the dissertation has received the *imprimatur* of the Faculty. Even when the *imprimatur* has been received, the result of the oral examination may be such as to entitle the candidate to the second vote (*insigni cum laude*) or to the third (*cum laude*).

10. No oath is administered. When the diploma is delivered to the candidate by the dean, he has to give his hand in promise that he will bear his academical dignity with honour.

11. The cost of the examination, exclusive of that of the diploma, amounts in all to 444 marks (about 22*l.* 5*s.*), which must be paid before the commencement of the examination. Of this sum, if the oral examination be not passed, 179 marks (about 9*l.*) are returned.

12. The diploma contains a record of the principal subject, the vote on the whole examination, and the judgment on the dissertation.

The Medical Faculty consists of the following professors, with several teachers. *Ordinary Professors*: W. Lange, Midwifery; W. Delffs, Chemistry; N. Friedreich, Medicine; C. Gegenbaur, Human and Comparative Anatomy; W. Kühne, Physiology; O. Becker, Ophthalmology; Th. von Dusch, Medicine; J. Arnold, Pathology; V. Czerny, Surgery. *Honorary Professor*: A. Nuhn, Anatomy. *Extraordinary Professors*: H. Oppenheimer, Therapeutics; S. Moos, Diseases of the Ears; F. Knauff, Forensic Medicine; W. Erb, Diseases of the Nervous System and Electro-therapeutics; H. Lossen, Surgery; A. Weil, Medicine and Diseases of the Skin and Syphilis. In the Philosophical Faculty, instruction in subjects connected with medicine is given by—*Ordinary Professors*: R. Bunsen, Chemistry; H. Kopp, Chemistry; H. A. Pagenstecher, Zoology; E. Pfitzer, Botany; *Extraordinary Professors*: A. Bornträger, Pharmacy; W. Lossen, Chemistry; A. Horstmann, Chemistry.

In connection with the University are a hospital, with medical, surgical, ophthalmic clinics, an institution for diseases of the ear, a lying-in institution, anatomical, pathological, physiological, and zoological institutes, two chemical laboratories, and a botanical garden.

In the winter session 1876-77, the number of students in the Medical Faculty was 85; and in the summer of 1877, 106.

#### UNIVERSITY OF JENA.

THE Medical Faculty of this University is constituted as follows. *Ordinary Professors*: F. Ried, Surgery; B. S. Schultze, Obstetrics; W. Müller, Pathology; W. Preyer, Physiology; G. Schwalbe, Anatomy; H. Nothnagel, Medicine. *Extraordinary Professors*: P. Schillbach, Diseases of the Eye and Ear; F. Siebert, Psychology; M. Seidel, *Materia Medica*; C. Frommann, History of Medicine, and

Histology. There are also two private teachers. Subjects connected with Medicine are also taught in the Philosophical Faculty by—*Professors*: G. A. Genter, Chemistry; E. Häckel, Zoology; *Extraordinary Professors*: W. Artus, General and Pharmaceutical Chemistry; E. Reichardt, Chemistry; E. Hallier, Botany.

Connected with the University are the Grand-Ducal hospital, lying-in institution, and lunatic asylum; anatomical, zoological, physiological, pathological, and chemical laboratories and museums, etc.

The number of students in the Medical Faculty in the winter session 1876-77 was 71; and in the summer of 1877, 91.

#### UNIVERSITY OF KIEL.

IN this University, the Medical Faculty consists of the following professors, with eight private teachers.

*Ordinary Professors*: C. C. T. Litzmann, Obstetrics and Gynæcology; F. Esmarch, Surgery; C. Bartels, Medicine; V. Hensen, Physiology; A. Heller, Pathology; C. Volckers, Diseases of the Eye; W. Flemming, Anatomy. *Extraordinary Professors*: J. Bockendahl, Forensic Medicine; G. Edlefsen, Medicine; F. Petersen, Surgery; A. Pansch, Anatomy. Instruction is also given in the Philosophical Faculty by *Ordinary Professors*—C. Himly, Chemistry; A. W. Eichler, Botany; A. Ladenburg, Chemistry.

There are a medico-chirurgical hospital, a lying-in institution, and laboratories and museums in connection with the several subjects taught.

The number of students attending the medical classes in the winter session 1876-77 was 70; and 84 in the summer session of 1877.

#### UNIVERSITY OF KÖNIGSBERG.

THE Medical Faculty of this University consists of the following professors, with five private teachers.

*Ordinary Professors*: G. Hirsch, W. von Wittich, Physiology; H. Hildebrand, Obstetrics; C. Kupffer, Anatomy; E. Neumann, Pathology; C. Schönborn, Surgery; B. Naunyn, Medicine; J. Jacobson, Ophthalmology; M. Jaffe, Materia Medica. *Extraordinary Professors*: H. Bohn, Diseases of the Skin; A. W. Grünhagen, Histology and Histological Chemistry; S. Samuel, Therapeutics; A. von Hippel, Ophthalmology; S. Pincus, Forensic Medicine; E. Berthold, Diseases of the Eye and Ear; F. R. A. Schneider, Surgery and Military Surgery; H. Benecke, Anatomy. Lectures are also given in the Philosophical Faculty by *Professors* R. Caspary, Botany; G. Zaddach, Zoology; H. Spigatis, Chemistry; H. Ritthausen, Chemistry.

Connected with the University are anatomical, pathological, and physiological institutions, medical, surgical, obstetrical, and ophthalmic clinics; chemical and pharmaceutical laboratories, etc.

In 1876-77 there were 127 students in the Faculty of Medicine; and 125 in the recent summer session.

#### UNIVERSITY OF LEIPZIG.

THE Medical Faculty of this University consists of the following professors and a number of private teachers.

*Ordinary Professors*: E. H. Weber, Anatomy; J. Radius, Hygiene and Pharmacology; K. R. A. Wunderlich, Clinical Medicine; K. S. F. Credé, Midwifery; E. Wagner, General Pathology

and Pathological Anatomy; K. Ludwig, Physiology; K. Thiersch, Surgery; E. A. Coccus, Ophthalmology; W. His, Anatomy; W. Braune, Anatomy. *Extraordinary Professors*: H. Sonnenkalb, Forensic Medicine and Hygiene; J. V. Carus, Zoology and Comparative Anatomy; A. Winter, Materia Medica; F. Germann, Obstetrics; K. Hennig, Obstetrics; K. H. Reclam, Forensic Medicine and Hygiene; B. Schmidt, Surgery; E. Wenzel, Anatomy and Histology; F. Hofmann, Hygiene and Chemistry; A. Rauber, Physiology; J. L. O. Heubner, Medicine; R. Hagen, Otolaryngology, etc.; F. Ahlfeld, Obstetrics; P. Flechsig, Anatomy and Histology. Instruction is also given in the Philosophical Faculty by—*Ordinary Professors*: H. Kolbe, Chemistry; A. Schenck, Botany; R. Leuckart, Zoology; G. Wiedemann, Chemistry; *Extraordinary Professor*: H. Hirzel, Pharmacy.

In connection with the University are chemical, physico-chemical, and pathologico-chemical laboratories; a zoological institute, under the direction of Professor Leuckart; an anatomical institute, under Professor His; a physiological institute, under Professor Ludwig; and various clinics, etc.

The number of students in the Medical Faculty during the winter 1876-77 was 451. In the summer of 1877 the number was 366.

#### UNIVERSITY OF MUNICH.

THE professorial staff of the Medical Faculty of this University is constituted as follows. *Ordinary Professors*: J. N. von Ringseis, General Pathology and Therapeutics; F. X. von Gietl, Medicine; F. C. von Rothmund, Surgery and Clinical Surgery; C. T. von Siebold, Zoology and Comparative Anatomy; W. von Bischoff, Anatomy and Physiology; F. Seitz, Materia Medica and Medicine; L. A. Buchner, Pharmacy; M. von Pettenkofer, Hygiene; W. F. C. von Hecker, Midwifery; L. von Buhl, General Pathology and Pathological Anatomy; J. N. von Nussbaum, Surgery, Ophthalmology, and Clinical Surgery; A. von Rothmund, jun., Ophthalmology; C. Voit, Physiology; H. von Ziemssen, Special Pathology and Therapeutics; B. von Gudden, Psychology. *Extraordinary Professors*: T. von Hessling, Histology; J. Kollmann, Histology; N. Rüdinger, Anatomy; O. Bollinger, Hygiene; H. Ranke, Materia Medica and Medicine; J. Amann, Midwifery; A. Martin, State Medicine; J. Oertel, Laryngoscopy; H. von Böck, Toxicology; J. Bauer, Medicine. Instruction in Chemistry is also given in the Philosophical Faculty.

Among the auxiliary institutions, the chemical laboratory for hygiene is under the direction of Professor von Pettenkofer.

The number of students attending the Faculty of Medicine in 1876-77 was 440; and in the summer of 1877 the number was 318.

#### UNIVERSITY OF MARBURG.

THE following are the professors in the Medical Faculty of this University. *Ordinary Professors*: K. F. von Heusinger, Pathology and Therapeutics; H. Nasse, Physiology; W. Roser, Surgery; C. P. Falck, Medicine; R. Dohrn, Midwifery; N. Lieberkühn, Anatomy; F. W. Beneke, Pathological Anatomy and General Pathology; E. Mannkopff, Pathology and Therapeutics; H. Schmidt-Rimpler, Ophthalmology; H. Kramer, Psychology. *Extraordinary Professors*: G. Wagener, Anatomy; H. Horstmann,



Forensic Medicine; H. Lahs, Midwifery; E. Külz, Physiology and Physiological Chemistry. Lectures are also given in the Philosophical Faculty by—*Ordinary Professors*: C. Zwenger, Pharmaceutical Chemical Chemistry; A. Wigand, Botany; R. Greeff, Zoology; T. Zincke, Chemistry.

A hospital and various laboratories, etc., for practical instruction are connected with the University.

The number of students attending the Medical Faculty in 1876-77 was 104; and 93 in the summer of 1877.

### UNIVERSITY OF ROSTOCK.

THE Medical Faculty of this University consists of the following *Ordinary Professors*: H. Stannius; T. Thierfelder, Special Pathology and Therapeutics; H. R. Aubert, Physiology; W. von Zehender, Ophthalmology; F. Schatz, Midwifery; F. S. Merkel, Anatomy; C. Gaeltgens, Chemistry; F. Trendelenburg, Surgery; A. Thierfelder, Pathological Anatomy. In the Philosophical Faculty, lectures on subjects connected with medicine are delivered by—*Ordinary Professors*: O. Jacobsen, Chemistry; and H. Grenacher, Comparative Anatomy and Zoology.

In 1876-77, 34 students attended the Faculty of Medicine.

### UNIVERSITY OF STRASBURG.

THE following is an extract from the regulations of the University of Strasburg relative to Degrees in Medicine.

Any person desirous of obtaining the Degree of Doctor of Medicine can only be admitted to graduation on fulfilling the following conditions. *a.* If he belong to the German empire, he must have completed an academical four years' course of study of Medicine, or of the Natural Sciences. By a unanimous decision of the Faculty, one or two Sessions may be omitted. Foreigners desirous of graduating are not required to have passed through the four years' course, if they produce proof of having received instruction equivalent to the course of study in the Medical Faculties of Germany. *b.* He must present a scientific essay (dissertation) composed by himself. *c.* He must undergo the Faculty examination. *d.* He must pay the prescribed fee of 100 thalers (about 15*l.* 15*s.*).

In his application for graduation, which must be addressed to the dean, the candidate must produce the evidence referred to in *a.*, and forward a scientific memoir on some department of medicine, with a written assurance that it is absolutely his own composition.

If the dissertation receive the approval of the Faculty, the candidate is admitted to examination.

The examination is conducted by the ordinary professors, and consists, as a rule, of an oral theoretical examination in all important departments of medicine. If the candidate fail to give satisfaction in the oral examinations, he must, in order to obtain the degree of doctor, again undergo the examination after a time to be determined by the Faculty, but he is not required to present a second dissertation.

In the case of candidates who have already passed the State examination, a colloquy before three members of the Faculty may, by the unanimous decision of the Faculty, be substituted for the oral examination.

Degrees in Medicine are conferred on absent candidates.

The fee of 100 thalers is to be paid to the dean at the time when the candidate offers himself. If the scientific dissertation be rejected, the candidate receives the whole fee back. If the dissertation be approved, but the candidate fail in the examination, the fee is not returned to him, but, when he is again admitted to examination, only half the fee is required.

After the Faculty examination has taken place and the dissertation has been printed and published, the candidate is formally admitted to the degree of Doctor by the issuing of a printed diploma, the names of the successful candidates being announced on the black board.

The candidate has to bear the expense of printing the dissertation and of the diploma.

There is no public ceremony, and no oath is administered.

Matriculation takes place on the first four Wednesdays of the season, from twelve to one o'clock. After the end of these four weeks, the rector can allow matriculation only on special grounds. Any one desirous of matriculating as a student, and attending the lectures and other instruction given in the University, must, on his arrival in Strasburg, communicate with the Secretary of the University, in order to be inscribed. Other persons desirous of attending the lectures must obtain permission from the respective teachers, and must then at once communicate with the Secretary of the University.

The following are the professors and teachers of the University. *Ordinary Professors*: G. Waldeyer, Human Anatomy; J. G. Jössel, Anatomy; F. L. Goltz, Physiology; F. Hoppe-Seyler, Physiological and Pathological Chemistry; O. Schmiedeberg, Pharmacology and Therapeutics; F. von Recklinghausen, Pathological Anatomy and Physiology, Histology; A. Kussmaul, Medicine and Clinical Medicine; A. Lücke, Surgery and Clinical Surgery; A. Gusserow, Obstetrics and Gynaecology; E. Strohl, Forensic Medicine and Public Health; F. Wiegner, History of Medicine, Diseases of the Skin and Syphilis; A. Aubenau, Obstetrics and Gynaecology; F. Jolly, Psychiatry. *Extraordinary Professors*: L. Laqueur, Diseases of the Eye; O. Kohts, Medicine and Diseases of Children. There are also six *doctents*. Instruction in subjects connected with Medical Science is also given in the Faculty of Mathematics and Natural Science by the following. *Professors*: O. Schmidt, Comparative Anatomy; A. de Bary, Botany; F. A. Flückiger, Pharmacy and Pharmaceutical Chemistry; R. Fittig, Experimental Chemistry; *Extraordinary Professors*: F. Rose, Practical Chemistry; A. Goette, Zoology.

The number of students in the winter session 1876-77 was 201; and in the summer of 1877, 171.

Connected with the University are institutions for the practical study of anatomy, experimental physiology, physiological chemistry, pathology, and pharmacology, and clinics for medicine, surgery, midwifery, mental diseases, diseases of the eye, and syphilis and diseases of the skin.

### UNIVERSITY OF TÜBINGEN.

THE Medical Faculty of this University consists of the following professors, with three private teachers. *Ordinary Professors*: V. von Bruns, Surgery; K. von Vierordt, Physiology; O. Schüppel, Pathology; J. Säxinger, Midwifery; C. Liebermeister, Medicine;

T. Jürgensen, Medicine and Materia Medica; A. Nagel, Ophthalmology; P. J. W. Henke, Anatomy. *Extraordinary Professors*: E. Dursy, Physiology; V. Oesterlen, Forensic Medicine and Hygiene; O. Leichtenstern, Medicine. Lectures are also given on subjects connected with Medicine in the Faculty of Natural Science by—*Ordinary Professors*: T. Eimer, Zoology; C. G. Hüfner, Chemistry; L. Meyer, Chemistry; and *Extraordinary Professors*: Hegelmaier, Botany; and W. Städel, Chemistry.

A hospital and institution for practical instruction are connected with this University.

The number of students in the Faculty of Medicine in the winter session 1876-77 was 157.

#### UNIVERSITY OF WÜRZBURG.

IN this University, the Medical Faculty consists of the following professors, with several *doctents*. *Ordinary Professors*: F. von Reinecker, Syphilis and Diseases of the Skin, also Psychiatry and Psychiatric Clinic; A. von Kölliker, Human, Comparative, and Topographic Anatomy; F. W. Scanzoni von Lichtenfels, Midwifery; W. von Linhart, Surgery and Clinical Surgery; A. Fick, Physiology; C. Gerhardt, Medicine and Clinical Medicine, and Diseases of Children; F. Rindfleisch, Pathological Anatomy, General Pathology, and History of Medicine; R. von Welz, Ophthalmic Surgery; A. Geigel, Clinical Medicine and Hygiene; M. Rossbach, Materia Medica. *Extraordinary Professors*: A. F. von Tröltzsch, Aural Surgery; W. Reubold, Forensic Medicine. Lectures are also given in the Philosophical Faculty by—*Ordinary Professors*: J. Sachs, Botany; J. Wislicenus, Chemistry; K. Semper, Zoology; F. Kohlrausch, Experimental Physics.

The number of students attending the Medical Faculty of this University in the session 1876-77 was 547; and in the recent summer session, 457.

#### MEDICAL EDUCATION IN AUSTRIA.

CANDIDATES for the degree of Doctor of Medicine in the Universities of the Austrian Empire are required to undergo three examinations. Before being admitted, the candidate must produce his certificate of birth or baptism, and evidence (a) of having received a sufficient preliminary education in one of the institutions of the countries comprised in the empire, or, if he do not belong to any of these, evidence of having matriculated as an ordinary student in a Faculty of Medicine; (b) of having attended lectures in a medical school during at least four sessions, and of having dissected during two sessions; (c) of having passed, at one of the Universities of the empire, three examinations, in botany, zoology, and mineralogy. Before being admitted to the second examination, he must produce evidence of having been engaged five years in professional study, and of having studied clinical medicine and clinical surgery, each during four sessions, and clinical ophthalmology and clinical midwifery, each during at least one session; and of having passed the first examination.

The first examination embraces physics, chemistry, anatomy, and physiology. There is a practical examination on anatomy and physiology, and a theoretical examination on all four subjects.

The second examination includes general pathology and therapeutics, pathological anatomy (histology), pharmacology (pharmacodynamics, toxicology, and prescribing), and the pathology and therapeutics of internal diseases. The candidate is examined practically in pathological anatomy (in preparation and on the dead body), and in medicine (at the bedside); and theoretically in all the subjects.

The third examination embraces surgery, ophthalmic surgery, midwifery and diseases of women, and forensic medicine. The examinations in surgery, ophthalmic surgery, and midwifery are practical; and there are theoretical examinations in all the subjects.

All the examinations are public. The fee for the first examination is 55 florins, for the second 60 florins, for the third 65 florins.

The Universities which grant degrees in Medicine are those of Vienna, Cracow, Gratz, Innsbruck, and Prague.

#### UNIVERSITY OF VIENNA.

IN this University, the Medical Faculty is constituted as follows. *Ordinary Professors*: C. A. Voigt, Anatomy; E. von Brücke, Physiology; F. von Arlt, Ophthalmic Surgery; J. von Dumreicher, Practical and Clinical Surgery; K. Langer, Descriptive and Topographic Anatomy; K. Braun von Fernwald, Midwifery, Clinical Midwifery and Gynaecology, etc.; H. von Bamberger, Special Medical Pathology, Therapeutics, and Clinical Medicine; R. L. Heschl, Pathological Anatomy; A. Duchek, Special Medical Pathology and Therapeutics, and Clinical Medicine; J. Späth, Theory and Practice of Midwifery; K. Stellwag von Carion, Ophthalmic Surgery; Th. Billroth, Practical and Clinical Surgery; G. Braun, Midwifery (for Midwives); F. R. Seligmann, History of Medicine; E. Hofmann, Forensic Medicine; K. Sigmund von Ilanor, Syphilology; K. Wedl, Histology; S. Stricker, Experimental and General Pathology; Th. Meynert, Psychiatry and Nervous Diseases; A. E. Vogl, Pharmacology and Pharmacognosy; E. Ludwig, Chemistry. *Extraordinary Professors*: E. Jäger von Jaxthal, Ophthalmic Surgery; J. Seegen, Balneology; C. Cessner, Use of Instruments and Bandages; H. Zeissl, Syphilology; M. F. Röhl, Contagious Diseases; L. Schlager, Psychiatry; F. Müller, Zootomy and Comparative Physiology; J. Klob, Pathological Anatomy; L. Dittel, Surgery; H. Widerhofer, Diseases of Children; M. Leidesdorf, Psychiatry; M. Schwanda, Medical Physics; M. Benedikt, Electro-Therapeutics; S. Stern, Elementary Clinical Instruction; A. Politzer, Aural Surgery; J. Greiber, Aural Surgery; J. Weinlechner, Surgery; G. Löbel, Clinical Medicine; S. L. Schenk, Embryology; A. Drasche, Epidemiology; K. von Schroft, Toxicology and Prescribing; A. von Mosetig-Moorhof, Operative Surgery; J. Nowak, Hygiene; K. Stoerk, Laryngoscopy and Diseases of the Larynx; L. von Schrötter, Laryngoscopy and Diseases of the Larynx; M. Kaposi, Diseases of the Skin and Syphilis; H. Auspitz, Diseases of the Skin and Syphilis; L. Neumann, Diseases of the Skin and Syphilis; F. Salzer, Operative Surgery; S. Exner, Physiology; M. Rosenthal, Diseases of the Nervous System; K. Mayrhofer, Midwifery and Gynaecology; G. Wertheim, Diseases of the Skin and Syphilis; L. Pollitzer, Diseases of Children; S. von Basch, Experimental Pathology. There are also between sixty and seventy private teachers. In the Philo-



sophical Faculty, lectures on subjects connected with medicine are given by—*Ordinary Professors*: K. von Brihl, Zootomy; L. K. Schmarda, Zoology; K. Claus, Zoology and Comparative Anatomy; J. Wiesner, Vegetable Anatomy and Physiology; A. Lieben, Chemistry; L. Barth von Barthenau, Chemistry; *Extraordinary Professors*: J. Böhm, Botany; H. W. Reichardt, Botany; E. Lippmann, Chemistry.

The Vienna Medical School owes its popularity among foreigners, in some measure, to the eminence of its professors, but still more to the extent and completeness of its General Hospital, and to the large number of courses which are given on special subjects.

The General Hospital (*Allgemeine Krankenhaus*) is capable of accommodating about 3,000 patients. There are two medical clinics, under Professors Duchek and Von Bamberger; two surgical clinics, under Professors Von Dumreicher and Billroth; a clinic for Diseases of the Eye, under Professors Von Arlt and Stellwag von Carion; and three clinics for Obstetrics—two for students being under the charge of Professors Carl Braun-Fernwald, and Späth, and one for Midwives under Professor Gustav Braun. The clinics for Diseases of Women are under the charge of Professors Braun-Fernwald and Späth. There are also special clinics for Diseases of the Skin, under Professor Hebra; for Syphilis, under Professor Sigmund; for Laryngoscopy, under Professor Schrötter; for Diseases of Children, under Professor Widerhofer; for Psychology, under Professor Meynert; and for Otology, under Professor Gruber. A considerable portion of the school is also situated within the hospital; thus there are the Pathological Museum and *post mortem* room, under the direction of Professor Heschl; the room for medico-legal necropsies, under Professor Hofmann; the Institute for Experimental Pathology, under the direction of Professor Stricker; and the Institute of Chemical Pathology, under Professor Ludwig. The Anatomical Museum and Dissecting Room, the Anatomical Institute and Dissecting Room, under the direction of Professor Langer; the Physiological Institute, where Practical Physiology is carried on under Professor Brücke; the Materia Medica Museum, and the Medical Library, are outside the hospital, in the Alsergrund.

The great clinics on medicine, surgery, etc., are conducted during the two sessions, from the middle of October to the middle of March, and from the middle of April to the end of July. They are under the immediate direction of the Professors of the Medical Faculty, and constitute, of course, an essential part of the curriculum of study for the ordinary Austrian student. The clinic for Diseases of the Skin, conducted by Professor Hebra, is much frequented by Americans, English, and other foreigners. The other clinics, however, are less frequented by foreigners, except there be an attraction in the unusual ability of the professor. Any student, however, who has sufficient time at his disposal, should not neglect to make himself acquainted with the method pursued in the medical clinics; he will probably find remarkable precision in diagnosis, combined with therapeutics of a more or less "rational" or nihilistic character.

It is to the special courses of instruction that the foreign student will find himself most attracted. These are most numerous during the regular academical sessions, but there are always some going on, even in August and September. They last

usually from four to eight weeks, and the lecturer generally commences a new course a few days after the old one is finished. The numbers in attendance vary from half a dozen to thirty or forty and sometimes even more. The courses for Diseases of the Throat and of the Ear are most frequented, and there are usually two or more courses on each of these subjects going on simultaneously. Among the other subjects taught in the same way are the use of the ophthalmoscope, operations on the eye, surgical operations on the dead body, auscultation and percussion, diseases of children, demonstrations of syphilis, demonstrations of skin-diseases, electro-therapeutics, etc. The courses are given for the most part by the private lecturers and the professors' assistants, and the material for them is derived from the wards of the clinical professors. For a six or eight weeks' course, the fee is usually from fifteen to twenty florins. The instruction in them is demonstrative or practical, involving the use of instruments and apparatus by the students themselves. Clinical instruction on children's diseases is given at the St. Anne's Hospital, in the immediate neighbourhood of the Krankenhaus, by Professor Widerhofer and Dr. Monti alternately, and is greatly valued by foreign students. This and many other of the courses are often attended by students for a second or even third time. It will be readily understood that a student desirous of occupying his time to the best advantage at Vienna must be prepared to expend a considerable sum in fees.

Vienna affords great opportunities for the study of pathological anatomy. There are separate *post mortem* rooms for the cases from the clinical wards, medico-legal cases, and the ordinary cases. At the two former, the clinical professor or assistant is usually in attendance. The examinations go on all the morning, there being sometimes as many as a dozen in one day. The ordinary *post mortem* examinations are gone through with great rapidity by pathological assistants without any view to teaching, but the most interesting specimens of the day are reserved for demonstration at a class held in the afternoon by the first assistant. This class is composed entirely of foreigners, and is well worth attending.

Vienna has the merit of having created the first professorship of experimental pathology, and the laboratory of Professor Stricker is no doubt one of the attractions of the school. Anyone proposing to become a pupil in the laboratory must bring with him a considerable proficiency in histology, and be prepared to devote himself to original investigation.

The number of students attending the courses in the Medical Faculty in the University at the winter session 1876-77 was 755.

#### UNIVERSITY OF CRACOW.

THE Medical Faculty of this University consists of the following professors, with several *docents*. *Ordinary Professors*: J. Majer, Physiology; A. Bryk, Surgery; G. Piotrowsky, Physiology and Microscopy; L. Teichmann, Descriptive Anatomy; M. Madurowicz, Midwifery; S. Janikowski, Forensic Medicine; L. Rydel, Ophthalmology; A. Stopczanski, Medical Chemistry; E. Korczynski, Medicine and Clinical Medicine. *Extraordinary Professors*: A. Rosner, Diseases of the Skin and Syphilis; J. Oettinger, History of Medicine; M. L. Jakubowski, Diseases of Children. Instruction in subjects connected with medicine is given in the Philosophical

Faculty by—*Ordinary Professors*: L. Czerwiakowski, Botany; E. Czyrniński, General and Pharmaceutical Chemistry; M. S. Nowicki, Zoology. *Extraordinary Professors*: E. Janczewski, Vegetable Anatomy and Physiology; K. Olszewski, Chemistry.

#### UNIVERSITY OF GRATZ.

IN this University, the Medical Faculty consists of the following professors, with about 12 *docents*. *Ordinary Professors*: A. Schauenstein, State Medicine; J. von Planer, Descriptive and Topographical Anatomy; K. von Rzehaczek, Surgical Pathology and Therapeutics and Clinical Surgery; K. von Hetly, Midwifery and Gynaecology; A. Rollett, Physiology and Histology; K. Blodig, Ophthalmic Surgery; O. Rembold, Medicine; H. Kundrat, Pathological Anatomy. *Extraordinary Professors*: J. von Koch, Epidemic Diseases and Sanitary Police; V. von Ebner, Histology and Embryology; K. B. Hoffmann, Chemistry; R. von Krafft-Ebing, Psychiatry; E. Lipp, Diseases of the Skin; C. von Schrott, General Pathology and Therapeutics. Lectures are also given in the Philosophical Faculty by—*Ordinary Professors*: H. Leitgeb, Botany; C. von Ettingshausen, Botany; L. von Pebal, Chemistry; F. E. Schulze, Zoology and Comparative Anatomy.

Connected with the University are anatomical, physiological, pathological, and zoological institutes; medical, surgical, ophthalmic, obstetric, and gynaecological clinics; a laboratory for physiological and pathological chemistry; a chemical laboratory, etc.

During the session 1876-77, 185 students attended the classes in the Faculty of Medicine.

#### UNIVERSITY OF INNSBRUCK.

THE following professors belong to the Medical Faculty. *Ordinary Professors*: K. Dantscher, Descriptive Anatomy; L. Kleinwächter, Obstetrics and Gynaecology; A. Tschurtschenthaler, General Pathology, Pharmacognosy, and Pharmacology; M. von Vintschgau, Physiology; F. Schott, Pathological Anatomy; L. Mauthner, Ophthalmic Surgery; E. Albert, Surgery and Clinical Surgery; K. Senhofer, Medical Chemistry. *Extraordinary Professors*: F. Wildner, Veterinary Medicine; J. Oellacher, Histology and Embryology; E. Lang, Syphilology and Dermatology; P. von Rokitsky, Diseases of the Chest. In the Philosophical Faculty instruction in subjects connected with medicine is given by—*Ordinary Professor*: C. Heller, Zoology and Comparative Anatomy; and A. Kerner, Botany.

The ordinary laboratories, clinics, and other means of practical instruction, are possessed by this University.

#### UNIVERSITY OF PRAGUE.

THE Medical Faculty of this University consists of the following professors, with several *docents*. *Ordinary Professors*: A. Jaksch von Wartenhorst, Medicine and Clinical Medicine; J. Blazina, Surgery and Clinical Surgery; J. Halla, Medicine and Clinical Medicine; J. Streng, Midwifery; S. Strupi, Veterinary Medicine; J. Hasner von Artha, Ophthalmology and Ophthalmic Clinic; J. von Waller, General Pathology and Therapeutics; J. Maschka, State Medicine; E. Hering, Physiology; F. Weber von Ebenhof, Midwifery; C. H. Huppert, Medical Chemistry; E. Klebs, Pathological Anatomy; C. Heine, Surgery and Clinical Surgery; A. Breisky, Mid-

wifery; C. Toldt, Anatomy. *Extraordinary Professors*: J. Lerch, Forensic, Physiological, and Pathological Chemistry; G. von Rittershain, Diseases of Children; Th. Eiselt, Clinical Medicine (in Bohemian); J. Kaulich, Diseases of Children; S. Mayer, Physiology; P. Knoll, Experimental Pathology; P. J. Pick, Skin-Diseases; A. Pribram, Clinical Medicine; E. Zaufal, Aural Surgery; J. Fischel, Psychiatry; L. Kleinwächter, Midwifery; H. Eppinger, Pathological Anatomy; W. Weiss, Operative Surgery. In the Philosophical Faculty, lectures are delivered by—*Ordinary Professors*: F. Stein, Zoology; G. A. Weiss, Botany; E. Linnemann, Chemistry; M. Wilkomm, Botany; A. Fric, Zoology (in Bohemian); L. Celakovsky, Botany (in Bohemian).

Connected with the University are an anatomical theatre; pathological, physiological, medico-chemical, and zoo-chemical institutes; medical, surgical, ophthalmic and dermatological clinics (one of the medical clinics being Bohemian); obstetric clinics for practitioners and for midwives, etc.

The number of students in the Medical Faculty in 1876-77 was 355.

### MEDICAL EDUCATION IN SWITZERLAND.

IN Switzerland, degrees in medicine are granted in the Universities of Basel, Bern, Geneva, and Zürich.

#### UNIVERSITY OF BASEL.

THE following are professors in the Medical Faculty of this University. *Ordinary Professors*: F. Miescher, senior, Pathological Anatomy; L. Rütinsever, Comparative Anatomy and Zoology; A. Socin, Surgery and Clinical Surgery; H. Immermann, Medicine; C. E. E. Hoffmann, Anatomy; J. J. Bischoff, Obstetrics and Gynaecology; F. Miescher, junior, Physiology; M. Roth, General Pathology and Pathological Anatomy; L. Wille, Psychiatry; H. Schiess, Ophthalmology. *Extraordinary Professors*: I. Hoppe, Therapeutics; E. Hagenback-Burckhardt, Diseases of Children; R. Massini, Polyclinic and Prescribing. There are also several private teachers. Lectures on subjects connected with medicine are given in the Mathematical and Scientific Department of the Philosophical Faculty by *Ordinary Professors* J. Piccard, Chemistry; and W. Pfeffer, Botany.

#### UNIVERSITY OF BERN.

THE Medical Faculty of this University is constituted of the following professors and about thirteen *docents*. *Ordinary Professors*: G. Valentin, Physiology; C. Emmert, Public Medicine; C. Aeby, Human and Comparative Anatomy; T. Kocher, Surgery; T. Langhans, Pathological Anatomy; H. Quincke, Medicine; P. Müller, Midwifery; A. Vogt, Hygiene. *Extraordinary Professors*: E. Schärer, Psychiatry; E. Pflüger, Ophthalmology; M. von Nencki, Physiological Chemistry. *Honorary Professors*: D. Jonquière, Materia Medica; R. Demme, Diseases of Children. Instruction in subjects connected with medicine is also given in the Mathematical and Scientific Department of the Philosophical Faculty by *Ordinary Professors* V. Schwarzenbach, Chemis-



try and Pharmacy; L. Fischer, Botany: *Extraordinary Professor*: T. Studer, Zoology.

Medical, surgical, obstetric, and special clinics, and physiological, pathological, and chemical laboratories, etc., are connected with the University.

### UNIVERSITY OF GENEVA.

THE University of Geneva grants the degrees of Bachelor in Medical Science and Doctor of Medicine.

The following classes of persons are admitted as students in the Faculty of Medicine: 1. Bachelors in Letters; 2. Bachelors in Science; 3. Students who have attended during two years lectures in the Section of Philosophy, and have undergone the examinations at the end of each year; 4. Pupils from the Classical Section of the Gymnasium, with certificates of studies; 5. Swiss and strangers who give evidence of their studies by means of diplomas or certificates; 6. Persons who undergo satisfactory oral examinations in the subjects comprehended in the classical section of the Gymnasium. Persons who furnish evidence that they have studied abroad, for a year at least, in a corresponding faculty, may be inscribed in the faculty of Medicine.

The course of study is as follows:—*First Year: Winter Session*: Botany (first part); Physics (first part); Comparative Anatomy or Zoology; Inorganic Chemistry; Practical Comparative Anatomy. *Summer Session*: Botany (second part); Physics (second part); Comparative Anatomy or Zoology; Organic Chemistry (first part); Practical Chemistry; Botanical Excursions. *Second Year: Winter Session*: Descriptive Anatomy (first part); Physiology (first part); Organic Chemistry (second part); Dissections. *Summer Session*: Descriptive Anatomy (second part); Physiology (second part); Practical Chemistry and Practical Comparative Anatomy. (Students are recommended to attend in addition courses of other subjects, such as Astronomy, Geography, Physics, Mineralogy, Geology, etc.) *Third Year: Winter Session*: Descriptive Anatomy (third part); Normal Histology; Dissection. *Summer Session*: Regional Anatomy; Embryogeny; Supplementary courses on subjects of the preceding years, on which the student's knowledge is weak; Practical Physiology, Histology, Comparative Anatomy, and Chemistry. (The examination for Bachelor in Medical Sciences is now undergone). *Fourth Year: Winter Session*: General Pathology; Internal Pathology; External Pathology; Dissection of Regions; Medical and Surgical Hospital Practice. *Summer Session*: Special Pathological Anatomy; Pathological Histology; Internal Pathology; External Pathology; Pharmacology; Medical and Surgical Hospital Practice; Exercises in the Laboratory of Pathological Histology. *Fifth Year: Winter Session*: Therapeutics; Hygiene; Legal Medicine; Theory of Obstetrics; Internal Pathology; External Pathology and Operations; Medical and Surgical Hospital Practice. *Summer Session*: Therapeutics; Legal Medicine; Internal Pathology; External Pathology; Medical and Surgical Hospital Practice; Operations. *Sixth Year: Winter and Summer Sessions*: Medical, Surgical, and Obstetrical Hospital Practice; Polyclinic; Ophthalmology, Psychology, etc. Repetitions preparatory to the examination for the Doctorate.

Persons who have satisfied the conditions laid down regarding the admission of students to the Faculty of Medicine may become candidates for the

degree of Bachelor in Medical Science. Students who have undergone the recognised annual examinations in the Faculty of Medicine or of Sciences are exempt from oral examinations in the subjects in which they have already been examined; provided that the examinations have been undergone not more than two years previously. Persons who produce diplomas or certificates giving evidence of their studies may be exempted from further examinations in the subjects in which they have already passed.

The following may become candidates for the degree of Doctor of Medicine: 1. Bachelors in Medical Science; 2. Persons who produce diplomas or certificates indicating that they have gone through an equivalent course of study. There are five examinations for the degree of Doctor of Medicine. *First Examination*: Human Anatomy and Histology; Physiology; Pathological Anatomy and General Pathology; a Necropsy, for which one hour is allowed; making an Anatomical Preparation, for which four hours are allowed. *Second Examination*: Medicine; Surgery; Operative Surgery; three Operations, and Application of Bandages. *Third Examination*: Hygiene; Therapeutics; Materia Medica and Pharmacology; Legal Medicine; a Medico-Legal Report on a real or supposed case, for which one hour is allowed. *Fourth Examination*: Clinical Examination of two medical and two surgical patients and of one case of labour (fifteen minutes being allowed for each case); Obstetrics, with operations on the mannikin; Discussion on each Clinical Case; Written Commentary on a Medical and a Surgical Case, two hours being allowed. *Fifth Examination*: Defence of a printed Dissertation, in the French language, on a subject in medical science chosen by the candidate. The dissertations must be previously communicated to the Faculty.

The examinations are public. Those for the degree of Bachelor are held at the beginning and end of the University year, and in the interval between the sessions. Applications for admission must be made to the Dean of the Faculty of Medicine eight days before the day of examination. The examinations for the degree of Doctor take place, on the demand of the candidates, at times determined by the Faculty.

The following courses of lectures are delivered. *Winter Session*: Normal Anatomy, Professor Laszkowski; Physiology, Professor Schiff; Histology, General Pathological Anatomy and Physiology, and Necropsies, Professor Zahn; Clinical Medicine, Professor Revilliod; Clinical Surgery, Professor Julliard; Clinical and Theoretical Midwifery, Professor A. Vaucher; Polyclinic, Professor Vulliet; Internal Pathology, Professor D'Espine; External Pathology and Operative Surgery, Professor Reverdin; Therapeutics, Professor Prevost; Hygiene, Professor Dunant; Pharmacology, Professor Brun; Psychiatry, Dr. Olivet. The following are free courses: Gynaecology, Dr. Gautier, Dr. Devrient, and Dr. Cordès; General Pathology, Dr. Durante; Ophthalmology, Dr. Barde and Dr. Haltenhoff; Accouchements, Dr. Odier; Balneotherapy, Dr. Glatz; Functions of Central Nervous System, Dr. C. Geib; Dental Medicine and Surgery, Dr. Guillot. *Summer Session*: The same subjects are taught (other departments being taken) as in winter, except Histology, General Pathology, Pharmacology, and Balneotherapy, and the following are given in addition; Special Pathological Anatomy, Professor Zahn; Legal Medicine, Professor Gosse; Pathology of the Urinary Organs, Dr. E. Martin; Otology, Dr. Colladon.

## UNIVERSITY OF ZÜRICH.

THE following are the regulations for the degree of Doctor of Medicine.

1. In order to obtain the degree of Doctor of Medicine, the candidate must send to the dean a written memorial, accompanied by (a) evidence of attendance on lectures on Physics, Chemistry, Botany, Zoology, and Medical Subjects; (b) a dissertation on some subject in medical science, which, after approval, the candidate must have printed at his own expense.

2. The dissertation is delivered by the dean for examination to the teacher of the subject of which it treats, or to the member of the Faculty at whose suggestion it has been composed. A recommendatory opinion of the first examiner decides its acceptance; in this case, his name appears on the title when it is printed. If the first opinion be doubtful or unfavourable, the thesis must be circulated among all the members of the Faculty, and is only accepted if two-thirds of them give their written votes in its favour.

3. When the dissertation is approved, the candidate is admitted to examination for the degree. The first part is written, and the candidate has to answer, in a closed room, two questions drawn by lot, one on Anatomy and Physiology, the other on Pathology and Therapeutics, Surgery, or Midwifery. The answers are circulated among the members of the Faculty, who, after examining them, express in writing their determination (by a simple majority) whether the candidate shall be admitted to the second (oral) examination. The oral examination comprises the above-named subjects, and also General Anatomy, Pathological Anatomy, Materia Medica, and Ophthalmic Medicine. The vote of two-thirds of the members of the Faculty present is necessary for the passing of a candidate.

4. After the examination has been passed and two hundred printed copies of the dissertation have been delivered, the graduation takes place under the presidency of one of the ordinary professors of the Faculty. The ceremony consists of the following acts: *a.* Reading the candidate's *curriculum vite*; *b.* A contribution by the candidate on some subject in medicine or natural science; *c.* A disputation on theses on subjects in medicine or natural science, which theses the candidate has printed after their approval by the dean, and which are distributed among those present; *d.* Reception of the candidate as Doctor of Medicine, Surgery, and Midwifery.

5. To the graduate is delivered, in duplicate, an official diploma.

6. The fee consists of 350 francs (14*l.*) and 15 francs to the bedell; it is paid before the oral examination (if this be remitted, before graduation). There is no additional fee if it be necessary to repeat the examination. The fee is not returned if the candidate be definitely rejected. The sum of 100 francs is remitted to candidates who already possess a recognised diploma; and in such cases the Faculty may, by a majority of two-thirds, agree to omit the oral examination. The fees are distributed in the following manner: 300 francs (or 200 if part be remitted) to the members of the Faculty in office at the time of the examination (an ordinary professor receiving three times as much as an extraordinary), 15 francs to the Dean for sealing the diploma; 15 francs to the Faculty chest; and 20 francs to the cantonal library.

7. The Faculty has the power of granting the

diploma of doctor *honoris causa*, for distinguished service to medicine.

The Medical Faculty of this University is constituted as follows. *Ordinary Professors*: H. Frey, Comparative Anatomy; H. Meyer, Anatomy; E. Rose, Surgery; L. Hermann, Physiology; K. J. Eberth, Pathology; F. Frankenhäuser, Obstetrics; G. Huguénin, Medicine; A. Cloetta, Materia Medica and Medicine; F. Horner, Ophthalmology; E. Hitzig, Psychological Medicine and Diseases of the Nervous System. *Extraordinary Professors*: O. Wyss, Diseases of Children; H. Spöndly, Obstetrics.

Connected with the University are the Cantonal Hospital with Medical, Surgical, and Ophthalmic Clinics; a Lying-in Institution; a Lunatic Asylum; and Pathological, Histological, Physiological, and Chemical Laboratories; Botanical Gardens; a Zoological Museum; a Medico-Chirurgical Library, and a Library of Natural Science.

## MEDICAL EDUCATION IN THE SCANDINAVIAN KINGDOMS.

### MEDICAL EDUCATION IN DENMARK.

IN Copenhagen, instruction in all departments of medicine, except clinical instruction and *post mortem* examinations, is carried on in the buildings which formerly constituted the Academy of Surgery. Here are the anatomical institution; collections of normal and pathological anatomy, and of surgical instruments; a physiological laboratory and museum; and a collection of materia medica; with rooms for the delivery of all lectures (except clinical). The lectures are delivered by the following staff: Dr. C. M. Reisz, Medical Pathology and Therapeutics; Dr. M. Saxtorph, Surgery, especially Clinical; Dr. P. L. Panum, Physiology and Practical Medical Chemistry; Dr. C. E. With, Medical Pathology and Therapeutics, especially Clinical; Dr. F. R. Schmidt, Normal Anatomy and Histology; Dr. Lange and Dr. Dahl, Pathological Anatomy and General Pathology; Dr. A. Stadfeldt, Midwifery and Diseases of Women and Children; Dr. T. S. Warnccke, Pharmacology and History of Medicine; Dr. C. G. Gædeken, Forensic Medicine and Hygiene; Dr. P. Plum, Surgery, especially Operative Surgery; Dr. Engelsted, Diseases of the Skin and Syphilis.

Besides the lectures, practical instruction is given in dissections, in normal and pathological histology, in the application of chemistry to medicine and in operative surgery. Instructions in the making of necropsies is given in the *post mortem* room of King Frederick's Hospital. A pathological laboratory is a desideratum.

Clinical lectures and demonstration are given at King Frederick's Hospital, and in midwifery at the Communal Hospital. At the former there are two medical and two surgical wards. One medical and one surgical ward are specially appropriated to clinical instruction, under the care of teachers resident in the hospital; the other two wards are also to be used for clinical instruction, and three senior medical officers, if not already professors or lecturers in the Faculty of Medicine, are ranked as "provisional teachers" in the Faculty during their six years' tenure of office.

Clinical instruction in midwifery and the diseases of infants is given in the Royal Lying-in and



Nursing Institution by the professor of the subject, who is also principal accoucheur.

The Communal Hospital, which is under the direction of the city authorities and the ministry of the interior, is connected with the Faculty of Medicine for the purposes of clinical instruction in syphilitic and cutaneous diseases, and in psychological medicine (until an asylum is established); also in clinical surgery, until the new surgical wards in the King Frederick's Hospital are opened.

The instruction in the Faculty of Medicine is given free of charge to the students, the professors receiving salaries rising from 1,600 to 3,000 rixdollars *per annum*. Private teaching is not therefore a very profitable occupation, except in subjects such as ophthalmology, for which no provision is made in the University.

The Academical year is divided into two sessions: the first extending from February 1 to June 9, and the second from August 23 to December 22. Examinations are held in January and June. The examination for the degree in Medicine is divided into two parts.

#### MEDICAL EDUCATION IN SWEDEN.

THERE are three medical schools in Sweden: viz., in the Universities of Upsala and Lund, and the Karolina Medico-Chirurgical Institute in Stockholm. In the last-named school, there are professorships of anatomy, physiology, medical chemistry, and pharmacy, pharmacology and pharmacodynamics, pathological anatomy, medicine, surgery, obstetrics, and diseases of children, and extraordinary professorships of forensic and state medicine, syphilidology, and psychological medicine. The institution of a professorship of hygiene is contemplated. In Upsala the professorships are anatomy, physiology, experimental physiology, and medical physics, medical chemistry and pharmacy, pathological anatomy, medicine, surgery, and an extraordinary professorship of psychological medicine. Obstetric medicine is taught by the professor of surgery, and state medicine by the professor of anatomy. In Lund the professorships are anatomy, medical chemistry and pharmacy, pathological anatomy, medicine, and surgery. Physiology is taught by the professor of anatomy; *materia medica* by the professor of chemistry; obstetric medicine by the professor of surgery; and forensic and state medicine by the professor of pathological anatomy.

Besides the professors there are teachers or docents. Of these, the Karolina Institute possesses four, Upsala three, and Lund one. Amanuenses are also attached to most of the professorships; the clinical amanuenses must be licentiates in medicine, while the remainder may be candidates in medicine who have passed through the full course of clinical instruction.

The three institutions possess museums of normal and pathological anatomy, collections of chemical and pharmaceutical preparations and drugs, of surgical and obstetric instruments, etc. In the Karolina Institute there is a library containing works on all the branches of medicine, the librarian of which delivers lectures on medical history, free of charge.

In the anatomical department there are museums of normal and comparative anatomy. In Upsala and Lund, these museums are contained in buildings erected at a comparatively recent date as *salles d'anatomie*. In Stockholm the anatomical museum occupies a separate building on the same ground

with the other buildings of the institute. In Upsala a histological institution, and in Lund one of pathological anatomy, are comprised in the anatomical department.

The Karolina Institute and the University of Upsala possess separate laboratories for medical chemistry. In Lund there is no special institution of the kind; but there is generally accommodation for medical students in the chemical laboratory.

Stockholm and Upsala possess pathological institutions in which necropsies of patients who have died in the neighbouring clinics are made; they contain also the museums of pathological anatomy; and, in connection with that at the Karolina Institute is a department of forensic medicine with a mortuary or *morgue*. In Lund the necropsies are made in the *post mortem* room at the hospital.

There is a Physiological Institution at Upsala, in the same building with pathological anatomy. In Stockholm a spacious room in the museum buildings has been appropriated to physiology.

Upsala possesses a hospital of 150 beds, which is entirely at the disposal of the University for the purpose of clinical teaching. The professors of medicine and surgery are *ex officio* medical officers of the hospital. There are also an assistant-physician and an assistant-surgeon, with a medical and a surgical amanuensis or clerk. Of the 150 beds, 100 or a few more are generally occupied, and are divided among medical, surgical, syphilitic and obstetric cases. There are generally about 50 each of medical and surgical cases, 10 to 15 syphilitic, while the obstetric beds, 8 in number, contain usually from 2 to 6 patients. The assistant-physician and surgeon have each separate wards. The out-patient department is at present under the charge of one of the University teachers, who is also the town medical officer, and is utilised for the purpose of clinical instruction. There is also a clinical ward in the asylum at Upsala, in charge of the professor of psychological medicine.

In Lund, clinical instruction is given in the State Hospital, and also in the University Hospital. In the latter, there are 80 beds for medical and 80 for surgical cases, with 67 beds in the syphilitic and 8 in the obstetric departments. Of these, 40 beds in the medical and 40 in the surgical department are appropriated to clinical instruction, which is given by the professors of medicine and surgery. The obstetric department is also clinical; the syphilitic at present is not. Clinical instruction in the diseases of the eye is also given.

In Stockholm, the pupils of the Karolina Institution receive clinical instruction at the Seraphim Hospital, the Children's and Lying-in Hospitals, the Town and State Lock Hospital, and the Lunatic Asylum at Konradsberg.

At the Seraphim Hospital, there are two medical and two surgical wards, under the charge of the ordinary and adjunct professors of medicine and surgery; and also a small gynaecological ward, attended by the professor of obstetrics and gynaecology. It contains about 300 beds. An ophthalmic clinic is comprised in the surgical department; and the gynaecological clinic (of eight beds) is attached to the medical. There are a resident medical and resident surgical officer, who receive salaries.

The Lying-in Hospital or Obstetric Clinic, can accommodate thirty patients; twenty beds are generally occupied. The professor of obstetrics in the Karolina Institution is *ex officio*, chief physician, and takes charge of the wards for eight months in the

year, being replaced by the adjunct professor for the remaining four months.

The whole of the cases in the General Orphan Hospital are available for clinical instruction. The daily number of infants under one year old in the institution, is from 100 to 110; sometimes it has been as high as 240. Of these, 10 or 12 per cent. are generally on the sick-list. There are also about 80 children between one and fifteen years of age. The number of patients between these ages is about 30 daily; this apparently large proportion is explained by the fact that sick children are taken in from Stockholm and the neighbourhood. In addition, from 1,600 to 2,000 are attended yearly as out-patients. Clinical instruction is given by the professor of diseases of children for eight months in the year, and four months by his adjunct.

The Town and State Lock Hospital has 180 beds, of which, on an average, 140 are occupied daily.

The Hospital for the Insane at Konradsberg has 220 beds, which are all available for clinical instruction. The professor of psychological medicine in the Karolina Institute is the chief physician.

### MEDICAL EDUCATION IN NORWAY.

IN the University of Christiania, lectures are delivered on the following subjects: surgery, ophthalmic surgery, physiology, midwifery, and diseases of women and children, descriptive anatomy, forensic medicine, pathology, and therapeutics, hygiene, materia medica, general pathology, and pathological anatomy, surgical pathology, zoology, and chemistry. Clinical instruction is given in the General Hospital on surgery, ophthalmic surgery, medicine, diseases of the skin and syphilis; at the Lying-in and Children's Hospital, on the diseases of women and children; at the Gansted Asylum and at the Christiania Lunatic Asylum, on mental diseases; and in the Town Hospital, on chronic diseases. Practical instruction is also given in chemistry, anatomy, and botany.

In the General Hospital and in the Lying-in Hospital, the rule is that the students act as clerks (*gjör Volontörtjeneste* = perform voluntary duty) for two years, viz., as assistant-clerks for three months in the medical wards, and the same in the surgical wards; then as senior clerks for three months in the skin wards, six months in the medical and six in the surgical wards, and for two or three months in the Lying-in Institution and Children's Hospital. The last named attendance is necessary before obtaining the certificate of *Candidatus Medicinæ*.

### MEDICAL DEGREES IN THE UNIVERSITY OF BRUSSELS.

By the regulations of the University of Brussels, British and other medical practitioners, provided with proper qualifications, are admitted to examination before the Faculty for the degree of M.D. Residence is not required from such as are unable to absent themselves long by reason of their professional occupations.

No degrees, however, are granted *in absentia*, and candidates must come over in person and have their names inscribed in the books of the University. The fees are, for inscription of name, 215 fr. (8*l.* 12*s.*); for examinations, 315 fr. (12*l.* 12*s.*); for registration of diploma, 10 fr. (8*s.*); total, 540 fr. (21*l.* 12*s.*). The

examination consists of three parts: 1. General Therapeutics, including Pharmacodynamics (proportions of doses), Special Pathology and Therapeutics of Internal Diseases, General Pathology, and Pathological Anatomy. 2. Surgical Pathology, Theory of Midwifery, Public and Private Hygiene, Medical Jurisprudence. 3. Examination at the Hospital of one or two patients under Medical and Surgical Treatment; Examination in Midwifery, consisting in Obstetrical Operations on the *mannequin* (model of pelvis); Examination in Operative Surgery consisting of some of the usual operations on the dead subject, such as amputation, ligature of an artery, etc.

Great importance is attached to practical knowledge, but candidates must also prove that they possess positive theoretical science.

Examinations take place at any time between October 15 and June 20, except during the Christmas and Easter vacations. They are *viva voce* and written, but candidates may be exempted from the latter and confine themselves to the *viva voce* tests. Candidates must exhibit their qualifications or diplomas.

The three examinations may be got through in a week, allowing a day's interval between each test. Saturday is the most eligible day for arriving, for candidates for whom time is an object. The delay of a week is, however, never exceeded by more than a day or two.

The examinations are conducted in English through the medium of an interpreter, for such candidates as are not familiar with the French language.

The degrees granted by the faculty are merely scientific titles, and do not confer the right to practise medicine in Belgium.

### MEDICAL DEGREES IN ITALY.

A CODE of regulations for Graduation in Medicine in the Universities of Italy was last year issued by the Government. The following is a translation.

1. The Medico-Chirurgical Faculty has the duty of giving instruction in all subjects relating to medicine and surgery, promoting the cultivation of all that is known in that field, and qualifying for the exercise of the medical profession in its several branches. 2. The course of medical and surgical study extends over six years, at the end of which free licence to practise is granted. 3. The following courses of instruction are obligatory: General Chemistry, Organic and Inorganic; Botany; Zoology, with Comparative Anatomy and Physiology; Experimental Physics; Normal Human Anatomy (*i.e.*, Histology, Descriptive and Topographic Anatomy, and Dissections); Human Physiology; General Pathology; Pathological Anatomy (demonstrations and exercises); Materia Medica and Experimental Pharmacology; Special Medical Pathology (or Principles and Practice of Medicine); Special Surgical Pathology (Surgery); Clinical Medicine and Exercises in Semiotics; Clinical and Operative Surgery; Theory and Practice of Ophthalmic Surgery; Theory and Practice of Diseases of the Skin and Syphilis; Midwifery and Clinical Midwifery; Forensic Medicine and Public Hygiene; Theoretical and Clinical Psychiatry (where opportunities exist). 4. The obligatory courses must each be attended



one year; except Pathological Anatomy, of which two years are required, and Human Anatomy and Clinical Medicine and Surgery, each three years. 5. The following courses are non-obligatory or complementary; Medical Chemistry; Experimental Toxicology; Critical History of Medicine. 6. Besides these, other free courses may also be given. 7. There shall be three biennial examinations in the Faculty of Medicine: the first for "promotion"; the second for "licence"; the third for the degree of "laureate", with a diploma conferring full licence to practise. 8. In the Universities of Pisa and Siena the licentiate shall have the title of laureate of the first stage (*laurea di primo grado*). 9. In order to be admitted to the first examination (*promozione*) the candidate must have been a student at the University at least two years, and have diligently attended the courses of Chemistry, Botany, Zoology, Comparative Anatomy and Physiology, Experimental Physics, Human Anatomy, and any subjects of instruction that he may choose, so as to make up eighteen hours of instruction per week. 10. The subjects of examination shall be Chemistry, Botany, Zoology, Comparative Anatomy and Physiology, and Experimental Physics. The Examining Board shall consist of the official teachers of the subjects of examination, with one or two additional examiners not belonging to the teaching body. On the proposal of the Faculty and with the consent of the Minister, the examination for promotion may be divided into two parts, one to be held at the end of the first year, and the other at the end of the second year. At the beginning of each scholastic year, the Faculty shall determine what courses are to be followed, and when. 11. The candidate for admission to the several examinations (licence) must have passed the first examination, have attended the University during two other years, and have diligently attended courses of Human Anatomy and Physiology, General Pathology, Practical Pathological Anatomy, *Materia Medica* and Experimental Pharmacology, Special Medical Pathology, Special Surgical Pathology, Clinical Medicine, and Clinical Surgery. The examining board shall be composed of the official teachers of the subjects mentioned, with one or two assessors not belonging to the teaching body. The examination shall be oral, and practical as regards Human Anatomy and *Materia Medica*. 13. A candidate for admission to the third examination (*laurea*) must have passed the second examination, have subsequently been a student at the University during two years, and have diligently attended the courses of Clinical Dermatology and Syphilology, Clinical Ophthalmic Surgery, Midwifery and Clinical Midwifery, Clinical Psychiatry, Exercises in Pathological Anatomy, Clinical Medicine and Surgery, Operative Surgery, Forensic Medicine and Hygiene, and voluntary courses so as to make up eighteen hours of instruction each week. 14. The candidate has to undergo an examination on the dead body and two clinical examinations. 15. The examination on the dead body shall be conducted by a subcommittee consisting of the professors of Operative Surgery, Pathological Anatomy, and Forensic Medicine, with one or two assessors not belonging to the official teaching body. 16. In this examination, the candidate will perform on the dead body a surgical operation, the nature of which will be decided by lot from a series prepared by the subcommittee. He will also perform a necropsy, and draw up a description of the appearances seen. Finally, he will answer the questions put to him by

the examiners, and especially those on the results of the necropsy which are asked by the professor of forensic medicine. 17. The first clinical examination will be conducted in the presence of a subcommittee consisting of the professors of Clinical Dermatology and Syphilology, Clinical Obstetrics, Clinical Psychiatry, Clinical Ophthalmology, and Forensic Medicine, with one or two extra-professorial assessors. 18. In this examination the candidate will examine four cases of disease selected from the four special classes, which have not previously been examined or treated in the clinical wards, and will give his opinion on the diagnosis, prognosis, and treatment. He will afterwards answer the questions and observations of the examiners and especially will reply to the questions put by the professor of Forensic Medicine on the obstetric and psychological cases. 19. The several clinical examinations shall be conducted in the presence of a subcommittee consisting of the Professors of Clinical Medicine, Clinical Surgery, Medicine, Surgery, and Forensic Medicine, with one or two extra-professorial assessors. 20. The candidate shall examine, in the presence of the subcommittee, four patients, two medical and two surgical, who have not yet been examined or treated in the wards, and shall write a description of the cases. He shall, finally, answer the questions asked by the examiners. 21. A student must have passed each stage of the third examination before he can be admitted to the next stage. 22. In each examination, a student rejected in one subject alone may present himself for examination in this subject only on a future occasion; but if he be rejected in two or more subjects, the whole examination must be repeated. 23. The three stages of the third examination having been passed, the three subcommittees unite to form a committee presided over by the President of the Faculty, and will judge of the merits of the candidates. The successful candidates will be declared doctors in medicine and surgery, and the President will refer them to the Rector in order that they may receive the diploma of laureate.

### MEDICAL EDUCATION IN THE UNITED STATES.

THE United States possess a very large number of institutions empowered by Charter to grant the degree of doctor of medicine; there being, in some instances, special colleges and schools of medicine and surgery, and in others the medical departments of Universities. We are indebted to an interesting article on Literature and Institutions, by Dr. J. S. Billings of the United States Army, published a year ago as a part of the *Century of American Medicine*, for a carefully prepared list of the medical schools. In reproducing it, we omit a number of institutions—twenty-five in all—which have ceased to grant medical degrees. The dates indicate the years in which the degrees in medicine were first conferred by the respective bodies.

*Alabama*.—Medical College of Alabama (Mobile): 1860.

*California*.—Medical College of the Pacific University (City) College (San Francisco): 1859.—University of California (San Francisco): 1865.

*Connecticut*.—Medical Department of Yale College (New Haven): 1814.

*District of Columbia*.—National Medical College,

Medical Department of Columbian University (Washington): 1826.—Georgetown University (Washington): 1852.—Howard University (Washington): 1871.

*Georgia*.—Medical College of Georgia (Augusta): 1833.—Savannah Medical College: 1854.—Atlantic Medical College: 1855.

*Illinois*.—Rush Medical College, Medical Department of University of Chicago: 1844.—Chicago Medical College, Medical Department of North Western University: 1860.

*Indiana*.—Medical College of Evansville: 1850.—Indiana Medical College (Indianapolis): 1870.—Indiana College of Physicians and Surgeons (Indianapolis): 1875.

*Iowa*.—College of Physicians and Surgeons (Keokuk): 1850.—Iowa State University (Iowa City): 1871.

*Kentucky*.—University of Louisville: 1838.—Kentucky School of Medicine (Louisville): 1851.—Louisville Medical College: 1870.—Hospital College of Medicine, Medical Department of Central University (Louisville): 1875.

*Louisiana*.—University of Louisiana (New Orleans): 1835.—Charity Hospital Medical College of New Orleans: 1876.

*Maine*.—Bowdoin College and Medical School of Maine: 1821.

*Maryland*.—University of Maryland (Baltimore): 1811.—Washington University School of Medicine (Baltimore): 1828.—College of Physicians and Surgeons (Baltimore): 1873.

*Massachusetts*.—Harvard University (Boston): 1785.

*Michigan*.—University of Michigan (Ann Arbor): 1851.—Detroit Medical College: 1869.

*Missouri*.—Missouri Medical College (St. Louis): 1841.—St. Louis Medical College: 1843.—Kansas City College of Physicians and Surgeons: 1870.

*New Hampshire*.—Medical School of Dartmouth College (Hanover): 1798.

*New York*.—College of Physicians and Surgeons of the City of New York: 1769.—Albany Medical College: 1839.—University of the City of New York: 1842.—University of Buffalo: 1847.—Long Island College Hospital (Brooklyn): 1860.—Bellevue Hospital Medical College (New York): 1862.—College of Medicine of Syracuse University: 1873.

*Ohio*.—Medical College of Ohio (Cincinnati): 1821.—Starling Medical College (Columbus): 1836.—Cleveland Medical College: 1844.—Cincinnati College of Medicine and Surgery: 1852.—Miami Medical College (Cincinnati): 1853.—University of Wooster (Cleveland): 1865.

*Oregon*.—Williamette University (Salem): 1867.

*Pennsylvania*.—University of Pennsylvania (Philadelphia): 1768.—Jefferson Medical College (Philadelphia): 1826.

*South Carolina*.—Medical School of the State of South Carolina (Charleston): 1825.—University of South Carolina (Columbia): 1868.

*Tennessee*.—University of Nashville: 1852.—Vanderbilt University (Nashville): 1875.

*Texas*.—Galveston Medical College: 1866.—Texas Medical College and Hospital (Galveston): 1874.

*Vermont*.—University of Vermont and State Agricultural College (Burlington): 1823.

*Virginia*.—University of Virginia (Charlottesville): 1828.—Medical College of Virginia (Richmond): 1839.

The condition of the curriculum of medical study

required for degrees in America is a matter which has received much attention in late years; it having been perceived that in many instances the course of study was not such as would secure the recognition of so much professional knowledge as a practitioner ought to have in entering on the practise of his profession. Often, we believe, a single session of attendance at a medical school was all that was required. It will, however, be seen from the extracts from prospectuses which we give below, that there is much improvement in this respect; and within the last year, a number of the medical colleges in the United States have formed an Association for the purpose of elevating the standard of medical education. At a meeting held in Chicago in June last, to organise the Association, representatives of the following colleges were present: Jefferson Medical College; College of Physicians and Surgeons, Medical Department of Columbia College, New York; Medical Department of the University of Louisiana; College of Medicine of Louisville; Medical Department of Iowa State University; Chicago Medical College, Medical Department of the North-Western University; Medical Department of University of Wooster, Ohio; Cleveland Medical College; Detroit Medical College; Starling Medical College; Medical Department, University of Vermont; Medical Department of Vanderbilt and Nashville Universities; Missouri Medical College, St. Louis; Dartmouth Medical College, Hanover; Kansas City College of Physicians and Surgeons; Miami Medical College, Cincinnati; Louisville Medical College; Department of Medicine and Surgery of the University of Michigan; Medical Department of the University of Louisiana; Rush Medical College; Indiana Medical College; Medical College of Fort Wayne; The Women's Hospital Medical College of Chicago.

During the session, the following Articles of Confederation were adopted.

I. *The Faculty*.—The medical members of the faculty must be regular graduates or licentiates and practitioners of medicine, in good standing, using the word "regular" in the sense commonly understood in the medical profession.

II. *Tuition*.—1. The scheme of tuition shall provide for a yearly systematic course of instruction, covering the general topics of Anatomy, including dissections, Physiology, Chemistry, Materia Medica and Therapeutics, Obstetrics, Surgery, Pathology, and Practice of Medicine. The collegiate session, wherein this course is given, shall be understood as the "regular" session. 2. The said regular session shall not be less than twenty weeks in duration. This section to go in force at and after the session of 1879-80. 3. Not more than one regular session, counting the regular session as one of the two courses of instruction required for graduation, shall be held in the same year.

III. *Requirements for Graduation*.—No person, whether a graduate in medicine or not, shall be given a diploma of "Doctor of Medicine" who shall not have fulfilled the following requirements, except as hereinafter provided for in Article IV. 1. He must produce satisfactory evidence of good moral character, and of having attained the age of twenty-one years. 2. He must file a satisfactory certificate of having studied medicine for at least three years, under a regular graduate, or licentiate and practitioner of medicine, in good standing, using the word "regular" in the sense commonly understood in the medical profession; this clause to take effect at and



after the session of 1879-80. No candidate shall be eligible for final examination for graduation, unless his term of three years' study shall have been completed, or shall expire at a date not later than three months after the close of the final examinations. 3. He must file the proper official evidence that, during the above mentioned three years, he has matriculated at some affiliated college, or colleges, for two regular sessions, and in the course of the same (except as provided in 4) has attended two full courses of instruction on the seven topics mentioned in Article II. But the latter, at least, of the two full courses must have been attended at the college issuing the diploma. No two consecutive courses of instruction shall be held as satisfying the above requirements, unless the time between the beginning of the first course and the end of the second is greater than fifteen months. 4. In case a college shall adopt a systematic graduated scheme of tuition, attendance on the whole of the same shall be equivalent to the requirements mentioned in 3, provided such scheme includes instruction in the seven topics mentioned in Article II, and requires attendance at, at least, two yearly regular collegiate sessions, of not less than twenty weeks' duration each. 5. The candidate must have passed a personal examination before the Faculty, on all seven of the branches of medicine mentioned in Article II. 6. He must have paid in full all college dues, including the graduation fee.

IV. *Honorary Degrees*.—An honorary degree of "Doctor in Medicine" may be granted, in number not exceeding one yearly, to distinguished physicians or scientific men of over forty years of age. But in such case the diploma shall bear across its face the word "Honorary", in conspicuous characters, and the same word shall always be appended to the name of the recipient, in all lists of graduates.

V. *Fees*.—1. All fees shall be paid in lawful money, and no promissory notes or promises to pay shall be accepted in lieu of cash, for payment of fees. 2. No ticket, or other certificate of attendance upon college exercises, shall be issued to any student until the dues for the same shall have been fully paid.—3. The established fees for the exercises of the regular session, except the matriculation fee, graduation fee, fee for dissections, may be reduced, not more than one half, to graduates of other affiliated colleges of less than three years' standing, and to undergraduates of the same who have already attended two full courses of the instruction of the regular session. 4. The same fees may be remitted altogether to a college's own alumni, to graduates of other affiliated colleges of three years' standing—the three years dating from the time of graduation and ending at the close of the regular session for which the tickets are given—to undergraduates who have already attended two full courses of the instruction of the regular session, the latter of which, at least, shall have been in the college making the remission, and to theological students, when not candidates for a diploma. 5. Under no circumstances whatever, other than the above, shall the Faculties, or any members of the same, grant, upon their own authority, any remissions or reductions of established fees. And it is distinctly understood and agreed that the Faculties will discountenance and oppose the authorising by governing boards, of admission of individual students upon other than the regularly established charges for their grade. 6. Remission or reduction of fees for other exercises than those of the regular session, return to a student of any moneys after payment of fees, or an appropriation of funds of the college for

payment of any student's fees, or part thereof, shall be deemed violation of the provisions of this Article in regard to remission or reduction of fees.

VI. *Recognition of other Colleges*.—No college shall admit to the privileges accorded in Articles III and V the students or graduates of any college which, during any period of the students' or graduates' pupillage, shall have been excluded from the list of affiliated colleges recognised by the Association.

A defect which prevails very extensively is the absence of any method of ascertaining that the person entering on the study of medicine has received a competent general education. The only exception of which we are at present aware is the Harvard University in Boston, which has recently issued a regulation that persons who had no degree in Arts or Science must before admission pass an examination in Latin, in the Elements of Physics, and in English: French or German being accepted in place of Latin. This, while it is to be recognised as a step in the right direction, falls far short of the requirements of our General Medical Council and the licensing bodies of Great Britain and Ireland.

An interesting feature in several of the principal American Colleges is the delivery of advanced courses of lectures on both general and special departments to gentlemen who have obtained their degrees. This plan resembles somewhat the special courses in the University of Vienna, to which allusion has already been made, and there can be no doubt that, conducted as the courses are by some of the most eminent among the teachers, they are of great advantage.

Subjoined are notes relating to some of the principal universities and colleges, derived from Dr. Billing's article above mentioned, and from the advertisements in the American journals.

#### UNIVERSITY OF PENNSYLVANIA.

THE Medical Department of this University is the oldest medical school in America, having been established in 1765 by Drs. John Morgan and William Shippen, on the plan of the Edinburgh University, of which the founders were graduates. The Professors are: Dr. Joseph Leidy (Anatomy); Dr. R. A. Penrose (Obstetrics and Diseases of Women and Children); Dr. A. Stillé (Medicine and Clinical Medicine); Dr. D. H. Agnew (Surgery and Clinical Surgery); Dr. H. C. Wood (Materia Medica and Pharmacy; and Nervous Diseases—Clinical); Dr. W. Pepper (Clinical Medicine); Dr. W. Goodell (Clinical Gynaecology); Dr. J. Tyson (General Pathology and Morbid Anatomy, and during 1877-78, Physiology); Dr. T. G. Wormley (Chemistry); Dr. J. Ashurst, jun. (Clinical Surgery); Dr. W. F. Norris (Diseases of the Eye—Clinical); Dr. G. Strawbridge (Diseases of the Ear—Clinical); Dr. L. A. Duhring (Diseases of the Skin—Clinical).

Besides these, the following *emeritus* professors belong to the Medical Faculty: Dr. G. B. Wood (Medicine); Dr. Henry H. Smith (Surgery); Dr. Francis G. Smith (Institutes of Medicine).

Candidates for the degree must attend three Winter Courses of five months each, consisting of Didactic Lectures, Clinical Lectures, and practical work in laboratories and hospitals. The curriculum is as follows. *First Year*: Anatomy, Histology, Materia Medica and Pharmacy, General Chemistry, Physiology, General Pathology, and Morbid Anatomy; Final Examinations in General Chemistry, and Materia Medica and Pharmacy. *Second Year*:

Anatomy, Topographical Anatomy, Medical Chemistry, Physiology, General Pathology and Morbid Anatomy, Therapeutics, Obstetrics, Theory and Practice of Medicine, Surgery, Clinical Medicine and Clinical Surgery; Final Examinations in Anatomy, Medical Chemistry, Physiology, General Pathology and Morbid Anatomy. *Third Year:* Topographical Anatomy, Theory and Practice of Medicine, Surgery, Obstetrics, Therapeutics, Operative Surgery, Minor Surgery and Bandaging, Diseases of Women and Children, Didactic Gynaecology; Bedside Instruction in Practical Medicine and Surgery; Practical Ophthalmology, Otology, Dermatology, and Electro-Therapeutics; Clinical Medicine and Surgery, and Special Clinics (Nervous Diseases, Diseases of Skin, Eye, Ear, and of Women and Children); Final Examinations in Therapeutics, Theory and Practice of Medicine, Surgery, and Obstetrics.

Great clinical facilities are afforded by the University, Philadelphia, and Pennsylvania Hospitals.

Students who have attended one course in a regular medical school (homœopathic or "eclectic" school not being recognised) will be admitted as students of the second course, after an examination in General Chemistry and *Materia Medica* and Pharmacy. Students who have attended two courses in a regular medical school, will be admitted as students of the third course after examination in General and Medical Chemistry, *Materia Medica* and Pharmacy, Anatomy, and Physiology. Graduates of other regular medical schools in good standing will be admitted as students of the third course without examination.

There are laboratories of Chemistry, Pharmacy, Histology, Physiology, and Pathology.

The fees, payable in advance, are: First Course of Lectures, including matriculation and dissection, 755 dollars; Dissecting material free. Second Course, 140 dollars. Third Course, 100 dollars; Graduation fee, 30 dollars.

The total number of Medical Graduates of this University up to the spring of 1876, according to Dr. Billings, was 8845.

An *Auxiliary Department of Medicine* was instituted in 1865, for the purpose of supplementing the ordinary course of medical instruction by lectures, given during the Spring months on certain collateral branches of Science. The Lectures are delivered by the following professors: Dr. Harrison Allen (Comparative Anatomy and Zoology); Dr. J. J. Reese (Medical Jurisprudence and Toxicology); Dr. S. D. Howell (Mineralogy and Geology); Dr. J. F. Rothrock (Botany); Dr. H. B. Hare (Hygiene). The lectures of this department are free to all the matriculates and graduates of the Medical Department of the University. To others, a fee of ten dollars is charged for each professor's ticket, or thirty-five dollars for the whole course. The degree of Doctor of Philosophy (Ph.D.) is conferred on graduates of the Medical Department of the University, or of other medical schools on the *ad eundem* list, who shall have attended two full courses of lectures in the Auxiliary Department of Medicine, and passed a satisfactory examination. The Faculty desire it to be understood that their examination standard for this degree is necessarily high. The "Alumni Association of the Auxiliary Department of Medicine" have founded an annual prize—the "George B. Wood prize"—to be bestowed upon that candidate who shall pass the best examination, and who shall present the best original thesis on an experimental subject.

## JEFFERSON MEDICAL COLLEGE, PHILADELPHIA.

THIS College was founded in 1824; and the first course of lectures was delivered in 1825-26; since which time (up to the spring of 1876) it has issued 6668 degrees in Medicine.

The lectures during the coming Winter Session will be delivered by the following professors: Dr. Samuel D. Gross (Institutes and Practice of Surgery); Dr. Ellerslie Wallace (Obstetrics and Diseases of Women and Children); Dr. John B. Biddle (*Materia Medica* and General Therapeutics); Dr. J. Aitken Meigs (Institutes of Medicine and Medical Jurisprudence); Dr. J. M. Da Costa (Practice of Medicine); Dr. W. H. Pancoast (General, Descriptive, and Surgical Anatomy); Dr. Robert E. Rogers (Medical Chemistry and Toxicology); Dr. Joseph Pancoast is *emeritus* professor of Anatomy.

Continuous Instruction is given throughout the year (with the exception of the months of July and August), which is free to the matriculates of the Winter Session. The following special subjects are taught during the Preliminary Course in September:—Medical Jurisprudence, by Professor Meigs; Dermatology and Syphilitic Disease, by Dr. F. F. Maury, Surgeon to the Philadelphia Hospital; Pathological Anatomy, by Dr. Longstreth, Pathologist to the Pennsylvania Hospital; Operative Surgery, with Operations on the Cadaver, by Dr. John H. Brinton, Surgeon to the Philadelphia Hospital; Diseases of the Urino-Genital Organs, by Dr. S. W. Gross, Surgeon to the Philadelphia Hospital; Ophthalmology is treated both clinically and didactically during the entire course, by Dr. William Thomson, Surgeon to the Wills Ophthalmic Hospital; Laryngoscopy, with Disease of the Throat, by Dr. J. Solis-Cohen.

The Demonstrator of Surgery, Dr. J. E. Mears, delivers a distinct course of Demonstrations of Surgery, with illustrations on the Cadaver, during the entire session.—Practical Chemistry, with Qualitative and Quantitative Analysis, the Examination of Normal and Abnormal Products, and Manipulation by the student, is taught by the Professor of Chemistry, assisted by the Demonstrator.—For the study of Practical Anatomy, a full supply of material is furnished free of charge. The dissecting ticket (fee, 10 dollars) is good for one year from the date of issue.

The New Hospital of the Jefferson Medical College is designed for the accommodation of 125 patients. In connection with the hospital is the outdoor or dispensary department, which furnishes much valuable material for clinical instruction. The amphitheatre, provided for Clinical Lectures, will seat more than six hundred students. Daily Clinical Lectures are given at the hospital, through the entire year, by members of the Faculty, and by the hospital staff.

A Summer Course of Supplementary Lectures is given, extending through April, May, and June. There is no additional charge for this Course to matriculates of the College, except a registration fee of five dollars; non-matriculates may pay thirty-five dollars, which is, however, credited on the amount of fees paid for the ensuing Winter Course.

The Fees are: For a full Course, 140 dollars; Matriculation Fee (paid once only), 5 dollars; Graduation Fee, 30 dollars.

Students who have attended two full courses on *Materia Medica*, Institutes, Anatomy, or Chemistry, may be examined on any of these branches at the end of their second course.



## HARVARD UNIVERSITY, BOSTON.

THE medical department of this University stands third in order of time among the existing medical schools, having been founded by Dr. Jones Warren in 1782. It had conferred degrees up to 1876 on 2206 candidates.

The following is the staff of professors: Dr. Calvin Ellis (Clinical Medicine), Dean; Dr. John B. S. Jackson (Pathological Anatomy); Dr. Oliver W. Holmes (Anatomy); Dr. Henry J. Bigelow (Surgery); Dr. John E. Tyler (Mental Diseases); Dr. John P. Reynolds (Obstetrics); Dr. Francis Minot (Theory and Practice of Medicine); Dr. Henry W. Williams (Ophthalmology); Dr. David W. Cheever (Clinical Surgery); Dr. James C. White (Dermatology); Dr. Robert T. Edes (Materia Medica); Dr. Henry P. Bowditch (Physiology); Dr. Edward S. Wood (Chemistry); Dr. Reynold H. Fitz (Pathological Anatomy—Assistant). The following are Instructors: Dr. Charles B. Porter (Surgery); Dr. I. Knight (Percussion, Auscultation, and Laryngoscopy); Dr. J. Collins Warren (Surgery); Dr. Wm. L. Richardson (Obstetrics); Dr. Thomas Dwight (Histology); Dr. W. H. Baker (Gynecology); Dr. W. B. Hills (Chemistry); Dr. G. H. F. Markoe (Materia Medica). Dr. C. B. Porter is Demonstrator, and Dr. H. H. A. Beach, Assistant Demonstrator, of Anatomy. Special Clinical Instruction is given—in Syphilis, by Drs. F. B. Greenough and E. Wigglesworth; in Otolology, by Drs. J. O. Green and C. J. Blake; in Diseases of Children, by Drs. C. P. Putman and J. P. Oliver; and in Diseases of the Nervous System.

Persons who hold no degree in arts or science must pass an *examination for admission* to this School, in Latin, in the elements of Physics, and in English. French or German will be accepted instead of Latin.

Instruction is given by lectures, recitations, clinical teaching, and practical exercises, distributed throughout the academic year. The year is divided into two equal terms, either of which is more than equivalent to the former "Winter Session", as regards the amount and character of the instruction. The course of instruction extends over three years, and has been so arranged as to carry the student progressively and systematically from one subject to another. In the subjects of anatomy, histology, chemistry, and pathological anatomy, laboratory work is largely substituted for, or added to, the usual methods of instruction.

Instead of an examination at the end of three years' period of study, a series of written examinations on all the main subjects of medical instruction has been distributed through the whole three years; and every candidate for the degree of Doctor of Medicine must pass a satisfactory examination in every one of the principal departments of medical instruction during his period of study.

The course of study is arranged as follows:—*First Year*: Anatomy, Physiology, and General Chemistry. *Second Year*: Medical Chemistry, Materia Medica, Pathological Anatomy, Clinical Medicine, Surgery, and Clinical Surgery. *Third Year*: Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery. Students are divided into three classes, according to their time of study and proficiency. Students who began their professional studies elsewhere may be admitted to advanced standing; but all persons who apply for

admission to the second or third year's class must pass an examination in the branches already pursued by the class to which they seek admission. Examinations are held in the following order:—End of first year—Anatomy, Physiology, and General Chemistry; end of second year—Medical Chemistry, Materia Medica, and Pathological Anatomy; end of third year—Therapeutics, Obstetrics, Theory and Practice of Medicine, Clinical Medicine, Surgery, and Clinical Surgery.

Every candidate for a degree in medicine must be twenty-one years of age; must have studied medicine three full years, have spent at least one continuous year at this School, have passed the required examinations, and have presented a thesis.

*Course for Graduates.*—For the purpose of affording to those already Graduates of Medicine additional facilities for pursuing clinical, laboratory, and other studies, in such subjects as may specially interest them, the Faculty has established a course which comprises the following branches: Histology; Physiology; Medical Chemistry; Pathological Anatomy; Surgery; Auscultation, Percussion, and Laryngoscopy; Ophthalmology; Dermatology; Syphilis; Psychological Medicine; Otolology; Electrotherapeutics; Gynecology; and Obstetrics. Single branches may be pursued.

*Fees.*—The fees are: For Matriculation, 5 dollars; for the year, 200 dollars; for one term alone, 120 dollars; for Graduation, 30 dollars. For Graduates' Course, the fee for one year is 200 dollars; for one term, 123 dollars; and for single courses, special fees. Payment is made in advance.

## UNIVERSITY OF THE CITY OF NEW YORK.

THIS University has from 1842 to 1876, granted 3393 degrees in Medicine. The professors in the Faculty of Medicine are: Dr. John C. Draper (Chemistry); Dr. Alfred L. Loomis (Pathology and Practice of Medicine); Dr. W. Darling (Anatomy); Dr. W. H. Thomson (Materia Medica and Therapeutics); Dr. J. W. S. Arnold (Physiology and Histology); Dr. John T. Darby (Surgery); Dr. J. Williston Wright (Obstetrics and Diseases of Women and Children); Dr. Faneuil D. Weisse (Practical and Surgical Anatomy); Dr. Charles I. Pardee (Diseases of the Ear—Dean); Dr. Alfred C. Port is *Emeritus* Professor of Clinical Surgery, and President of the Faculty; Dr. Martyn Paine is *Emeritus* Professor of Materia Medica and Therapeutics; Dr. R. A. Witthaus, jun., is Associate Professor of Chemistry and Physiology; and Dr. Joseph W. Winter is Demonstrator of Anatomy.

A Post-Graduate Course of Lectures is delivered by the following professors: Dr. D. B. St. John Roosa (Ophthalmology); Dr. Wm. A. Hammond (Diseases of the Mind and Nervous System); Dr. Stephen Smith (Orthopædic Surgery); Dr. J. W. S. Gourley (Diseases of the Genito-Urinary System); Dr. Montrose A. Pallen (Gynecology); Dr. Henry G. Piffard (Dermatology); Dr. A. E. Macdonald (Medical Jurisprudence); Dr. Joseph W. Howe (Clinical Surgery).

The Collegiate Year is divided into three Sessions: a Preliminary Session, a Regular Winter Session, and a Spring Session.

The Professors of the Practical Chairs are connected with the Bellevue and Charity Hospitals, and the University Students are admitted to all the Clinics given therein, free of charge

In addition to daily Hospital Clinics, there are eight Clinics each week in the College. Five Didactic Lectures are given daily in the College building, and Evening Recitations are conducted by the Professors of Chemistry, Practice, Anatomy, Materia Medica, Physiology, Surgery, and Obstetrics, upon the subjects of their lectures.

In the Spring Session, besides the daily Clinics, Recitations, and Special Practical Courses, there are given Lectures on Special Subjects by the members of the Post-Graduate Faculty.

The Dissecting-Room is open throughout the entire Collegiate year: material is furnished free of charge.

Students who have studied two years may be admitted to examination in Chemistry, Anatomy, and Physiology, and, if successful, will be examined at the expiration of their full course of study, on Practice, Materia Medica and Therapeutics, Surgery, and Obstetrics; but those who prefer it may have all their examinations at the close of their full term.

*Fees.*—These are: For Course of Lectures, 140 dollars; Matriculation, 5 dollars; Demonstrator's Fee (including material for dissection), 10 dollars; Graduation Fee, 30 dollars; Post-Graduate Certificate, 30 dollars.

#### BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK.

THE teaching staff of the College consists of the following professors:—Dr. Isaac E. Taylor (Obstetrics and Diseases of Women—*Emeritus*); Dr. James R. Wood (Surgery—*Emeritus*); Dr. Fordyce Barker (Clinical Midwifery and Diseases of Women); Dr. Austin Flint (Principles and Practice of Medicine, and Clinical Medicine); Dr. W. H. Van Buren (Principles and Practice of Surgery, Diseases of Genito-Urinary System, and Clinical Surgery); Dr. Lewis A. Sayre (Orthopædic Surgery, Fractures and Dislocations, and Clinical Surgery); Dr. Alexander B. Mott (Clinical and Operative Surgery); Dr. Wm. T. Lusk (Obstetrics and Diseases of Women and Children, and Clinical Midwifery); Dr. Edmund R. Peaslee (Gynæcology); Dr. William M. Polk (Materia Medica and Therapeutics, and Clinical Medicine); Dr. Austin Flint, jun. (Physiology and Physiological Anatomy); Dr. Alpheus B. Crosby (General, Descriptive, and Surgical Anatomy); Dr. R. Ogden Doremus (Chemistry and Toxicology); Dr. Edward G. Janeway (Pathological Anatomy and Histology, Diseases of the Nervous System, and Clinical Medicine); Dr. Henry D. Noyes (Ophthalmology and Otolaryngology); Dr. John P. Gray (Psychological Medicine and Medical Jurisprudence); Dr. Edward L. Keyes (Dermatology, and Adjunct to the Chair of Principles of Surgery); Dr. Edward G. Janeway (Practical Anatomy); Dr. L. M. Yale (Lecturer Adjunct upon Orthopædic Surgery); and Dr. A. A. Smith (upon Clinical Medicine). A distinctive feature of the method of instruction in this College is the union of clinical and didactic teaching. During the Regular Winter Session, in addition to four didactic lectures on every week-day, except Saturday, two or three hours are daily allotted to clinical instruction. The Spring Session continues from March 1st to June 1st. During this Session, daily Recitations from Text-Books in all the Departments are held by a corps of examiners. Regular Clinics are also given in the Hospital and College Building.

*Fees.*—1. For the Regular Session: All the lectures, including clinical lectures, 140 dollars; Matriculation

fee, 5 dollars; Demonstrator's ticket (including material for dissection), 10 dollars; Graduation fee, 30 dollars. 2. For the Spring Session: Matriculation (ticket good for the following winter), 5 dollars; Recitations, Clinics, and Lectures, 35 dollars; Dissection (ticket good for the following winter), 10 dollars.

Students who have attended two full Winter Courses of Lectures may be examined at the end of their second course upon Materia Medica, Physiology, Anatomy and Chemistry, and, if successful, they will be examined at the end of their third course upon Practice of Medicine, Surgery, and Obstetrics only.

This College was instituted in 1862; and from that time up to 1876, according to Dr. Billings, conferred degrees on 1908 candidates.

#### TEXT-BOOKS.

THE object of the subjoined notes on text-books is to inform the student in general terms of the books which he may consult with advantage. The list is not intended to be altogether exclusive—there may be good books not mentioned in it; nor is it our purpose to say always which book is the best in any subject. Some students learn best from one book; others from another—assuming that both books go over the same ground. Again, some books are more adapted than others to the teaching of the school to which the pupil belongs. In addition to the ordinary text-books, reference will be made to some which, though not absolutely necessary to the student, may be studied both by him and by the licensed practitioner with advantage.

#### ANATOMY AND PHYSIOLOGY.

Among the indispensable text-books must be mentioned in the first place Quain's *Elements of Anatomy* (Longmans and Co.), edited by Drs. Sharpey and Allen Thomson, and Mr. Schäfer. In its last edition the work has undergone thorough revision; and an interesting addition has been made in the form of a chapter on the Development of the Embryo, by Dr. Allen Thomson, than whom a more competent authority could scarcely be found. Gray's *Anatomy* (Longmans) has been edited by Mr. Holmes; and among the improvements in the last edition are copies of drawings by Dr. Klein. Messrs. Churchill announce a new edition of Wilson's *Anatomist's Vade Mecum*, by Dr. G. Buchanan and Mr. A. E. Clark of Glasgow. For use in the dissecting-room, Ellis's *Demonstrations of Anatomy* (Smith, Elder, and Co.) has long established its claim as a trustworthy guide. It contains reduced copies of plates in the author's *Illustrations of Dissections*—a work which from its price the student can scarcely be expected to purchase, but which he should not fail to consult for assistance. Braune's *Atlas of Topographical Anatomy*, translated and edited by Mr. Bellamy, is a valuable book for reference. The drawings are made from plane sections of foreign bodies. Another good book for dissectors is Mr. Christopher Heath's *Practical Anatomy*. Dr. Cleland of Galway has also brought out a concise and accurate *Directory for the Dissection of the Human Body* (Smith, Elder, and Co.). For students of Osteology, Mr. Wagstaffe has prepared the *Student's*



*Guide to Human Osteology* (J. and A. Churchill); and there is also Mr. Norton's *Osteology for Students* (Baillière, Tindal, and Cox). Mr. Thomas Cooke's *Tablets of Anatomy and Physiology* will be found very useful as containing much information, condensed in small space and well arranged. Mr. St. George Mivart's *Elementary Lessons in Anatomy* is a book in which the interest of the subject is increased by a demonstration of the chief relations of the structure of man to other animals. To students who feel an interest in the study of Comparative Anatomy, we would recommend, as works that will give much information without being too large or costly, Mr. Flower's *Osteology of the Mammalia* (Macmillan and Co.), and Dr. H. A. Nicholson's *Manual of Zoology and Advanced Text-Book of Zoology*; as well as Huxley's *Manuals of the Anatomy of Vertebrated and Invertebrated Animals* (J. and A. Churchill). Dr. Rolleston's *Forms of Animal Life* is a good book for laying a sound foundation of Comparative Anatomy. A recently published work by Mr. W. R. Parker and Mr. Bettany on the *Morphology of the Skull* (Macmillan and Co.) is a book in which the "vertebrate theory" of the skull will be found to be ably dealt with; and, for the general study of Embryology (in addition to the chapter by Dr. Thomson in Quain's *Anatomy*, already referred to) the *Elements of Embryology* by Dr. M. Foster and Mr. Balfour, is an excellent book.

For instruction in Histology, the chapter on General Anatomy in Quain's *Anatomy* is an excellent guide. Mr. Schäfer, one of the editors of Quain's *Anatomy*, is also the author of a *Course of Practical Histology* (Smith, Elder, & Co.)—a subject on which he is well known to be an authority. Professor Rutherford of Edinburgh has brought out a second edition of *Outlines of Practical Histology for Students and Others* (Churchill). Professor Stricker's collection of essays on *Human and Comparative Histology*, translated for and published by the New Sydenham Society, is a valuable work of reference; as is also Heinrich Frey's *Histology and Histo-Chemistry of Man*, translated by Mr. Barker (J. and A. Churchill).

In Physiology, one of the best books is Dr. M. Foster's *Text-Book of Physiology* (Macmillan and Co.) Another work of very high merit is Dr. L. Hermann's *Elements of Physiology*, of which a new English edition is being prepared by Professor Gamgee of Manchester (Smith, Elder, and Co.) The well known Kirkes's *Handbook of Physiology* has been re-edited, with improvements, by Mr. Morratt Baker (J. and A. Churchill); and, besides Dr. Carpenter's *Principles of Human Physiology*, edited by Mr. Power, a new edition of the *Manual of Physiology* by the same author is announced as being nearly ready. The increased study in recent years of Practical Physiology has led to the publication of several guides to this department of study. An *Elementary Course of Practical Physiology* by Dr. M. Foster and Mr. Langley (Macmillan and Co.) is a book that can be recommended to beginners; while the more elaborate *Handbook for the Physiological Laboratory*, by Drs. Sanderson, Klein, Foster, and Brunton (Churchill) is more fitted for those who intend to follow the study to a greater extent than medical students usually do.

## MEDICINE.

For the student who is commencing his clinical studies, there are several very good guide-books. Among them are Dr. A. W. Barclay's *Guide to Medical Diagnosis* (third edition, J. and A. Churchill), Dr. S. Fenwick's *Student's Guide to Medical Diagnosis* (fourth edition, with 105 engravings, Churchill); and Dr. O. Sturges' *Introduction to the Study of Clinical Medicine* (Smith, Elder, and Co.) More advanced students and practitioners may consult with advantage Dr. Da Costa's *Medical Diagnosis* (third edition, Smith, Elder, and Co.) As a guide in physical diagnosis, Dr. Gee's *Auscultation and Percussion* (Smith, Elder, and Co.), of which a new edition is announced as nearly ready, may be safely trusted. Another useful book for the same purpose is Flint's *Manual of Percussion and Auscultation* (J. and A. Churchill).

Of text-books in General Medicine, it is only necessary to mention Sir Thomas Watson's *Lectures on the Principles and Practice of Physic* (Longmans and Co.), and Dr. Aitken's *Science and Practice of Medicine* (C. Griffin and Co.) as works whose reputation has long been established. Among other books which may be recommended for the use of the student, are Dr. F. T. Roberts's *Handbook of the Theory and Practice of Medicine* (third edition, H. K. Lewis), Dr. J. S. Bristowe's *Treatise on the Theory and Practice of Medicine* (Smith, Elder, and Co.), Dr. Aitken's *Outlines of the Science and Practice of Medicine* (C. Griffin and Co.), and Dr. Barlow's *Manual of the Practice of Medicine* (J. and A. Churchill). The advanced student and the practitioner will do well to consult Dr. Russell Reynolds's *System of Medicine* (four volumes, Macmillan and Co.), Trousseau's *Lectures on Clinical Medicine* (New Sydenham Society), and Ziemssen's *Cyclopædia of the Practice of Medicine* (Sampson Low and Co.)

## SURGERY.

Mr. Erichsen's *Science and Art of Surgery* (two volumes, Longmans and Co.), Mr. Holmes's *Surgery—its Principles and Practice* (Smith, Elder, and Co.), and Mr. Bryant's *Practice of Surgery*, are all very complete works, one of which should be in the possession of, or readily accessible to, the student. For those who prefer smaller and more condensed works, there is the well known Druitt's *Surgeon's Vade-Mecum* (Churchill), of which an eleventh edition is announced as being in the press. Among the works more specially devoted to Practical Surgery, the late Sir William Fergusson's excellent *System of Practical Surgery* (fifth edition, J. and A. Churchill), holds the foremost place. Mr. Spence's *Lectures on Surgery* (A. and C. Black) is valuable as a record of practical instruction, illustrated by cases. Among other books which may be consulted with advantage, are Mr. Holmes's *System of Surgery* (Longmans and Co.), Dr. S. D. Gross's *System of Surgery* (Smith, Elder, and Co.), and Mr. Gant's *Science and Practice of Surgery* (J. and A. Churchill).

For the guidance of the student who is being instructed in practical and operative surgery, there are several good books. Mr. Christopher Heath's *Manual of Minor Surgery and Bandaging* (fifth edition, Churchill) has for several years enjoyed a high reputation as a trustworthy guide. The *Manual of Operative Surgery on the Dead Body*, by Mr. Thomas Smith and Mr. Walsham (Longmans and Co.); Mr. Berkeley Hill's *Manual of Bandaging*

(Smith, Elder, and Co.); Mr. Bellamy's *Student's Guide to Surgical Anatomy* (J. and A. Churchill); Mr. Maunder's *Operative Surgery*, (second edition, J. and A. Churchill); and Mr. Joseph Bell's *Manual of the Operations of Surgery* (MacLachlan and Stewart), are also works which can be recommended. Other larger works, most valuable for reference—and to be procured by the student if possible—are Mr. Jonathan Hutchinson's *Illustrations of Clinical Surgery*, consisting of plates, woodcuts, etc., illustrating surgical diseases, symptoms, accidents, operations, etc. (published in fasciculi by J. and A. Churchill); and Mr. C. Heath's *Course of Operative Surgery*, with coloured plates (J. and A. Churchill).

#### MIDWIFERY.

The two text-books of Obstetric Medicine which hold the first place in the present day are, Dr. W. S. Playfair's *Treatise on the Science and Practice of Midwifery* (Smith, Elder, and Co.); and Dr. Leishman's *System of Midwifery* (second edition, J. Maclehose, Glasgow). Every student should have one or the other of these. For those who prefer smaller books, Dr. D. Lloyd Roberts's *Student's Guide to the Practice of Midwifery* (J. and A. Churchill) will be useful; there are also Dr. Alfred Meadow's *Manual of Midwifery* (Renshaw) and Dr. C. H. Carter's translation of Karl Schröder's *Manual of Midwifery* (J. and A. Churchill). Dr. J. G. Swayne's *Obstetric Aphorisms* (fifth edition, J. and A. Churchill) is a work which, though not a text-book, is very useful as a convenient refresher of the memory. Dr. Barnes's *Lectures on Obstetric Operations* (third edition, J. and A. Churchill) is a book which should be in the possession of every advanced student and general practitioner; as should also the *Clinical History of the Medical and Surgical Diseases of Women*, by the same author (Churchill), of which a second edition is announced as in the press.

#### PATHOLOGY.

An English translation of Virchow's little treatise on *Post Mortem Examinations: the Art of Making them*, has been published by J. and A. Churchill; and the reputation of the Berlin professor as an authority in the matter is a sufficient warrant of its value. As a memorial of pathology, Dr. T. H. Green's *Introduction to Pathology and Morbid Anatomy* (Renshaw) is well calculated to give a student sound ideas. The *Lectures on Pathological Anatomy* of Drs. Wilks and Moxon, and Dr. J. F. Payne's improved edition of Jones and Sieveking's *Manual of Pathological Anatomy*, are also good books. We would also strongly recommend students to consult, and to possess if possible, Rindfleisch's *Manual of Pathological Histology*, and Billroth's *Surgical Pathology and Therapeutics*; both edited by the New Sydenham Society.

#### SPECIAL SUBJECTS.

There are several good text-books of the special departments which are taught in the schools. For students of Ophthalmic Surgery, Mr. Soelberg Wells's *Treatise on Diseases of the Eye* (third edition, J. and A. Churchill), and Mr. R. B. Carter's *Treatise on Diseases of the Eye* (Macmillan and Co.), and Mr. Macnamara's *Manual of Diseases of the Eye* (third edition, J. and A. Churchill), are books that will be useful. Messrs. Churchill have

also published a little book by Mr. Charles Higgins, entitled *Hints on Ophthalmic Out-Patient Practice*.—In Aural Surgery, Mr. Dalby's new book on *Diseases and Injuries of the Ear* is probably the best.—For the use of students in Dermatology, Dr. Tilbury Fox has provided a treatise on *Skin-Diseases, their Description, Pathology, Diagnosis, and Treatment* (third edition, H. Renshaw); and also a little epitome of the same subject, which, while not intended to supersede larger works, will be found very useful to the student and practitioner. Mr. Erasmus Wilson's works on skin-diseases are well known. Dr. R. Liveing's *Notes on the Treatment of Skin-Diseases* (Chapman and Co.), is also an useful epitome. Good representations are most important in this department; and Dr. Tilbury Fox has accordingly supplied an excellent *Atlas of Skin-Diseases* (Renshaw); while a work with a similar title by Dr. Duhring of Philadelphia (Lippincott and Co.) is also good.

#### MATERIA MEDICA AND THERAPEUTICS.

Text-books in Materia Medica abound. A well-known and useful book as a manual of materia medica is Dr. Garrod's *Essentials of Materia Medica and Therapeutics*, edited by Dr. Buchanan Baxter (Longmans and Co.) It requires, however, to be supplemented by a treatise on therapeutics; for which purpose, Dr. Ringer's *Manual of Practical Therapeutics* (H. K. Lewis), Dr. Waring's *Manual of Practical Therapeutics* (J. and A. Churchill), and Dr. Farquharson's recently published *Guide to Therapeutics* (Smith, Elder, and Co.), are to be recommended. Dr. Milner Fothergill's *Practitioner's Handbook of Treatment* (Macmillan and Co.) will be especially welcome to those who are interested in the endeavour to show the agreement between science and practice. Dr. H. C. Wood's *Treatise on Therapeutics* (Smith, Elder, and Co.) pays special attention to the therapeutic action of drugs. Other trustworthy books are Dr. W. G. Smith's *Commentary on the British Pharmacopæia* (Smith, Elder, and Co.), and Royle and Harley's *Manual of Materia Medica and Therapeutics* (sixth edition, J. and A. Churchill), and Dr. Phillips's *Materia Medica and Therapeutics* (J. and A. Churchill), Dr. Lauder Brunton's *Tables of Materia Medica* (Smith, Elder, and Co.); are a most comprehensive and valuable syllabus, and will be very useful to the student.

As text-books in the application of Electricity to Medicine, besides Dr. Althaus's well-known book, two which are likely to prove useful to students, being the work of experts in the matter, have been published, viz., a *Text-Book of Electricity in Medicine and Surgery*, by Dr. G. V. Poore (Smith, Elder, and Co.); and a *Handbook of Medical and Surgical Electricity*, by Dr. H. Tibbits (J. and A. Churchill).

#### FORENSIC MEDICINE.

As elementary works of convenient size, and containing valuable instruction, Dr. A. S. Taylor's *Manual of Medical Jurisprudence* (J. and A. Churchill), and Guy and Ferrier's *Principles of Forensic Medicine* (Renshaw), are to be recommended. The more advanced student and the practitioner should consult Dr. Taylor's *Principles and Practice of Medical Jurisprudence* (J. and A. Churchill), the recently published *Handbook of Forensic Medicine and Toxicology* by the late Dr. Bathurst Woodman and Dr. Tidy (J. and A.



Churchill); and the translation of Casper's *Forensic Medicine*, published by the New Sydenham Society. The last-named book will give an idea of the manner in which medico-legal investigations are carried out on the continent.

## NOTES ON SCIENTIFIC AND SANITARY APPARATUS, ETC.

UNDER this head are given notes of some articles which may be useful to the student and practitioner. Regarding many of them, further information will be found among the advertisements, an index of which is given at page iii.

### MEDICAL BOOKS, ETC.

#### MEDICINE.

A Handbook of the Theory and Practice of Medicine. By Frederick T. Roberts, M.D., B.Sc., F.R.C.P., Assistant Physician and Assistant Teacher of Clinical Medicine at University College Hospital; Assistant Physician to the Brompton Hospital for Consumption and Diseases of the Chest, etc. Third Edition, 2 vols., 8vo.—(*H. K. Lewis, 136, Gower Street, W.C.*)

A Text-Book of Practical Medicine, with particular reference to Physiology and Pathological Anatomy. By Dr. Felix von Niemeyer. Translated from the Eighth German Edition, by special permission of the Author, by Dr. Humphrey and Dr. Hackley. Two vols., large 8vo.—(*H. K. Lewis, 136, Gower Street.*)

The Science and Practice of Medicine. By William Aitken, M.D., F.R.S., Professor of Pathology in the Army Medical School, etc., etc. In two vols., 8vo. Sixth edition. "The Standard Text-Book in the English language.....There is no work more indispensable for the Student and Practitioner."—*Edinburgh Medical Journal*.—(*Charles Griffin and Co., Stationer's Hall Court.*)

Outlines of the Science and Practice of Medicine. By Professor Aitken, M.D., F.R.S. 8vo. "Students preparing for examination will hail it as a perfect godsend for its conciseness."—*Athenæum*.—(*Charles Griffin and Co., Stationer's Hall Court.*)

Professor Anderson's Work "On the Curability of Tubercular Affections", consists of two lectures on Tubercular Peritonitis. The Author, in giving it publicity, wishes to raise the question whether true tubercle, which is generally considered as necessarily fatal, cannot by persistent and energetic treatment be arrested in its progress, and the inflammation which often accompanies it be removed.—(*James Maclehose, 61, St. Vincent Street, Glasgow.*)

#### DISEASES OF THE BRAIN AND NERVOUS SYSTEM.

A Treatise on the Diseases of the Nervous System. By William A. Hammond, M.D., Professor of Mental and Nervous Diseases in the Bellevue Hospital Medical College, New York, etc. Sixth Edition, with 100 illustrations, large 8vo.—(*H. K. Lewis, 136, Gower Street.*)

Spiritualism and Allied Causes and Conditions of Nervous Derangement. By W. A. Hammond, M.D. Crown 8vo.—(*H. K. Lewis, 136, Gower Street.*)

On Alcoholism: the Various Forms of Alcoholic Delirium and their Treatment. By Dr. V. Magnan, Physician to St. Anne Asylum, Paris; Laureate of the Institute, etc. Translated by W. S. Greenfield, M.D., M.R.C.P. 8vo.—(*H. K. Lewis, 136, Gower Street.*)

#### SURGERY.

Operative Surgery. From the French of Professor Claude Bernard; illustrated with 88 hand-coloured plates. English Edition, by A. T. Norton, F.R.C.S., Surgeon to and Lecturer on Surgery at St. Mary's Hospital.—(*Baillière, Tindall, and Co., King William Street, W.C.*)

Contributions to Reparative Surgery: showing its Application to the Treatment of the Deformities produced by Destructive Diseases or Injury, Congenital Defects from Arrest or Excess of Development, and Cicatricial Contractions from Burns. By Gurdon Buck, M.D. With numerous engravings, large 8vo.—(*H. K. Lewis, 136, Gower Street.*)

A Practical Treatise on the Diseases, Injuries, and Malformations of the Urinary Bladder, the Prostate Gland and the Urethra. By Samuel D. Gross, M.D., Professor of Surgery in the Jefferson Medical College, Philadelphia. Third Edition, with 170 engravings; 8vo.—(*H. K. Lewis, 136, Gower Street.*)

Diseases of the Nose and its Accessory Cavities. By W. Spencer Watson, F.R.C.S. Eng., M.B. Lond. Copiously illustrated.—(*H. K. Lewis, 136, Gower Street.*)

The Surgeon's Pocket-Book. International Prize Essay. By Surgeon-Major J. H. Porter, Assistant Professor of Military Surgery in the Army Medical School. Illustrated, 16mo. "This capital little book...of the greatest practical value...A surgeon with this manual in his pocket becomes a man of resource at once."—*Westminster Review*.—(*Charles Griffin and Co., Stationer's Hall Court.*)

Professor Morton's "Treatment of Spina Bifida by a New Method", is an account of a number of cases of Spina Bifida treated by various surgeons according to Dr. Morton's Method. It is prefaced by a short account of the malady, and a few remarks on the different cases are added.—(*James Maclehose, 61, St. Vincent Street, Glasgow.*)

#### MIDWIFERY.

Professor Leishman's System of Midwifery. The Author's object in this work has been to furnish to students and practitioners a complete system of the midwifery of the present day, and the success which has attended its publication shows that its purpose has not been in vain. It is illustrated by nearly two hundred woodcuts.—(*James Maclehose, 61, St. Vincent Street, Glasgow.*)

Extra-Uterine Pregnancy; its Causes, Species, Pathological Anatomy, Clinical History, Diagnosis, Prognosis, and Treatment. By John S. Parry, M.D., Obstetrician to the Philadelphia Hospital. 8vo.—(*H. K. Lewis, 136, Gower Street.*)

#### ANATOMY AND PHYSIOLOGY.

Anatomical Plates: a Text-Book for Students, containing 113 hand-coloured plates, designed under the direction of Professor Masse, and adopted by the Imperial Council of Public Instruction in France. English Edition, by E. Bellamy, F.R.C.S., Surgeon to Charing Cross Hospital and Professor of Anatomy in the Govern-

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now manufactured and sent out, the inner vessel or porous pot is charged and hermetically sealed. To set the Battery in action, all that is required is to half-fill the outer vessel with water and empty into it one of the packets of salt; and fill the inner or porous cell with water. The Burglar Contact or Thief-Detector for Doors and Windows, provides for the disconnection of the circuit by the pressure of the door or window on a small spring. On the removal of the pressure by the opening of the door or window, the circuit is completed and the bell continues ringing. The Electric Bell System, when used in houses, allows the adoption of this safeguard against thieves at very little extra expense.—(*E. H. Jones, Monmouth.*)

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**PARKER'S PATENT AUTOMATON EARTH-CLOSETS AND INODOROUS COMMODES, AND THE "LIEBIG" DRY CLOSETS.**—The automaton earth-closets are self-acting, and directly the seat is relieved from the pressure of its occupant, the deposit is covered, and no offensive smell can possibly arise. For a portable house-commode, they are made about the size of an easy chair, or to imitate a chest of drawers, in



plain deal, or painted, or varnished, or in any of the more costly woods, and French polished. They can be placed in bed- or dressing-rooms, in a closet, or any convenient place; or they are made for fixing in any closet-room in the house, or the garden-closet, and the parts so fitted that any carpenter can fix the whole in two or three hours. The removal of the earth is not at all offensive. The closet can be used over a pail, a tray on wheels, or a pit; the earth hopper can be filled from the back or ends; and the removal effected the same way. The earth should be dry garden or field earth—and, if of a clayey nature so much the better—sifted with a screen or cinder sieve, not sandy or fine, and it may be laid to dry and used over again many times; it will remain perfectly sweet. The closets are all made self-acting. They can also be had to pull up, as an ordinary water-closet, when so ordered. —(*John Parker, Woodstock.*)

MEDICAL TUTOR.—Mr. A. Ramsay, M.A. (classical and mathematical honours), assisted by experienced graduates and foreign masters, continues to prepare candidates in all subjects for matriculation, Apothecaries' Hall, Royal College of Surgeons (membership and fellowship), and the Pharmaceutical Preliminary Examinations. Terms, references, and particulars on application.—(142, *Gower Street, W.C.*)

## REPORTS OF FOREIGN SOCIETIES.

### ACADEMY OF MEDICINE IN PARIS.

May 8. *Typhoid Fever*.—M. Chauffard continued his critical examination of the opinions he had expressed in his former discourse on the etiology and pathology of typhoid fever. On the present occasion, he spoke of the etiological question to which the discussion had exclusively referred. He asked, Is the cause of specific diseases necessarily a single one? Is it always a specific microzoic agent, a figured or liquid ferment? Here is a question of fact. It is true that when the causative agent is hidden from all perception, it may always be said that, though having always escaped observation, it was none the less present. There are, however, cases in which the hypothesis of panspermia cannot be made available, and in which the spontaneous generation of the disease presents itself as an undeniable fact. This occurs in certain given circumstances; in the purulent infection of the wounded, the purulent fever of lying-in women, the ophthalmia of new-born infants, and in diphtheritic affections, unless the existence in the air of a germ, always ready to be developed, be admitted. No one contests contagion in typhoid fever; but can no cases of the development of this disease be found, in which the manifest cause is something quite other than contagion? There are numerous instances of this kind in the facts recently brought together by M. Gueneau de Mussy and M. Jaccoud. Can it be admitted that in these instances the typhoid poison developed itself spontaneously in the faecal matter. This hypothesis raises a large number of objections. M. Chauffard prefers to find a second cause of typhoid fever in the putrid emanations. Doubtless they are far from bringing on, in all cases where they exist, the break-

ing out of epidemics; but the same is true of contagion. The effects are not produced to a fatal extent; for that issue favourable circumstances, and a peculiar receptivity of the organism, are necessary. With reference to the sewers, whilst requiring that they should be kept in the best possible condition, M. Chauffard thought they have been unduly blamed. No one contests their sanitary advantages, whilst nothing proves that they are the cause of epidemics. M. Chauffard places overcrowding of houses and human beings, and air polluted by breathing, in the same category as putrid emanations and contagion. If to these conditions be associated extreme and continuous fatigue, overcrowding of dwelling rooms, bad and insufficient nourishment, everything is prepared for the breaking out of typhoid fever.

*Phthisis*.—Dr. Metzquer read a fourth paper on the non-inoculability of phthisis. Does phthisis develop itself from the ingestion of tuberculous substances? The results obtained by MM. Chauveau and Villemin on this subject, and the etiological consequences which they drew from them, will be in the memory of our readers. Numerous experiments on various animals have led M. Metzquer to different conclusions. They are as follows. 1. Tuberculous matters, when ingested after a certain time, bring on irritative phenomena and phlogosis of the intestinal canal at the points where these substances remain the longest time. This initial and unvarying fact is made evident by diarrhoea and emaciation. 2. Intestinal thrombosis, resulting from hyperæmia, and from the obstruction of the circulation, is remarked. 3. The inflammation may be ulcerative, and then a way, and that the only one, is opened to infection and all its consequences. 4. Verminous pneumonia, which certain experimenters assert to be easily distinguishable from tubercle, cannot, at a certain moment, be distinguished from it, and has been a frequent cause of error in this question, even to the most skilful micrographers. To wind up, therefore, the ingestion of tuberculous food cannot be considered as leading to the inoculation of phthisis.

May 15. *On the Epidemics of Plague, which have recently broken out in the East*.—M. Proust said that the three principal foci have been Cyrenaica, Arabia, and Mesopotamia. For the last two years no case of plague has shown itself in the two first-named of these places, but recent news has informed us of the fresh explosion of this scourge at Bagdad, whilst eastward it has invaded the Persian territories. This occurrence is so much the more serious from its coincidence with the Eastern war, of which the consequences, famine and poverty, are, in conjunction with inundations and the secular impregnation of the soil in consequence of superficial inhumations, the principal causes of plague. Europe may, therefore, be again threatened with an invasion of this disease. What is to be feared is the propagation of the epidemic on the shores of the Caspian Sea, and especially in Egypt, by means of the Persian Gulf. It is, therefore, at Baku, on the Caspian Sea, and at Alexandria, that the action of the European governments should be concentrated.

*On the Dynamic Inequality of the two Cerebral Hemispheres*.—M. Broca read, for a commission comprised of MM. Baillarger, Gavarret, and Broca, a report on a memoir by M. Armand de Fleury, bearing the above title. Since the able researches of M. Broca on the seat of speech, the idea of the dynamic inequality of the two cerebral hemispheres, so contested at first, is now admitted. M. de Fleury believes

that he has found the cause of this inequality in the unequal circulatory activity of the two hemispheres. He bases his opinion on—1, the unequal size of the orifices of the brachio-cephalic trunk on the right, and the common carotid artery on the left; 2, the bifurcation which results on the right from the presence of the brachio-cephalic trunk, and the angular deviation which the column of blood undergoes. On the first point, M. Broca did not agree with the views of the writer, but the influence attributed to the mode of origin of the two carotids is unquestionably a fact. Amongst the causes which diminish the activity of the circulation in the arteries, the principal are the friction of the blood-corpuscles on the walls of the vessels, the decomposition of force, which takes place wherever the column of blood undergoes a change of direction: finally, the shock, which is produced at the point of bifurcation. As these conditions are more frequently met with in the right carotid than in the left, M. de Fleury has subsequently endeavoured to demonstrate, by researches on the dead and living body, that the calibre of the left carotid was greater. But this predominance of calibre, even if it really exist, cannot possess all the importance attributed to it by the writer of the memoir, even if it tend to render the majority of mankind right handed. The hereditary or acquired conditions, which may exercise an influence on the development and nutrition of the organs, cannot be ignored. With even greater reason, the conclusions to which M. de Fleury has arrived in making the attributes of the mammalia depend on the anatomical disposition of the arch of the aorta and its four branches, must be accepted with reserve.

May 24. *The Union of Large Wounds*.—Dr. Azam read a paper on a new method for the union of large wounds, especially amputation wounds. This method, adopted by the Bordeaux surgeons, is based on the following general principles; to unite, by first intention, all the parts which can be united, and to facilitate the suppuration of those which must be allowed to suppurate. It comprises three stages—deep drainage, deep suture, and superficial suture. Its success is only assured by the simultaneous employment of at least two of these stages, drainage and superficial suture, or superficial suture only.

*Partial Hypertrophy of the Neck of the Uterus*.—M. Courty read a paper on this subject. The least known and the most important form of this hypertrophy is that of the walls of the cavity of the neck. Generally situated in the median line, it is often congenital, being due to an arrest of the process of reabsorption of the septum, which at first separates the two uteri. Irritation from excess of coitus, inflammation of the neck of the uterus after abortion or delivery, also engender and increase it. It often occurs at the level of the os uteri, less often at the level of the isthmus, and more rarely still in the cervical canal. M. Courty subsequently described its symptoms and treatment.

*Intraparietal Aponeurotic Fibromata*.—Dr. Guyon read a paper on intraparietal aponeurotic fibroma, and especially on those of the cervico-dorsal region. These tumours, which, up to the present time, have only been observed in women during that period of life when the several functions are active, are irregular in their progress, and sometimes attain an enormous development, but always remain enclosed in the region where they take their origin. They are amenable to operation at all stages of their

development, and do not appear to be subject to recurrence.

*Vulvar Hyperæsthesia: Vaginismus*.—M. de Ransé read a note on vulvar hyperæsthesia and vaginismus. After having spoken of the contradictory opinions held on the nature and reciprocal relations of vulvar hyperæsthesia and vaginismus, amongst others those of Marion Sims, who unites the two orders of phenomena into one single disease, and that of M. Gosselin, who denies the existence or even the possibility of vaginal spasm, and refers the functional disorders attributed to vaginismus, to vulvar hyperæsthesia alone, M. de Ransé communicated three cases observed at Nérès, which warranted him in establishing an absolute independence in certain cases between vulvar hyperæsthesia and spasmodic contraction of the sphincter vaginae.

May 29. *Typhoid Fever*.—The third part of M. Chauffard's discourse on the etiology and pathogeny of typhoid fever was devoted to the refutation of the parasitic doctrine in specific diseases. If typhoid fever and specific diseases be true parasitic diseases, constituted by proliferation on the organic soil of a living ferment, the disease only proceeds from one cause, the introduction to this organic soil of a microzoon, which will then develop itself into a disease. But this, M. Chauffard said, cannot be, and he endeavoured to demonstrate it by proofs drawn from the practice of medicine generally and from experiment. As a matter of fact, specific diseases have a certain number of salient characteristics, which are not met with in truly parasitic diseases. There is, in the first instance, the extraordinarily variable receptivity with regard to specific agents, whilst a living ferment, placed in contact with the liquid in which it has the capability of living, develops itself there to a fatal extent; anthrax, for instance, always follows the introduction of the anthracoid bacteria. Again, there is the becoming accustomed to the action of specific agents, and the prospective immunity after a first attack; there is the different gravity of the specific diseases; and their incubation, sometimes so prolonged and remarkable. In fine, how great is the difference in the symptomatic appearances in these two groups of diseases. One of the best constituted of the virulent diseases, apparently the most favourable to the parasitic pathogeny, is syphilis. It would nevertheless be inexplicable in its divers manifestations, as in its transmission by descent. The experimental study of specific agents, of viruses, for instance—specially contagious agents—is equally conclusive. M. Chauffard relies on M. Chauveau's *Physiology of the Virulent Diseases* (1873), which is devoted to the demonstration of this fact, that the agent of the virulence in viruses is never found to be a true proto-organism; a figurate ferment, but an ordinary and normal element of our tissues and humours. If, says this author, there exist proto-organisms, ferments in the specific humours of true virulent diseases, it is only in an accidental manner. They cannot, therefore, be considered as elements which carry the poison. The only figurate portions which are constantly to be found in virulent humours are the cellular and granuliform elements, such as they are found in all the pathological and even in certain normal fluids. These granules are not living creatures; they are simple anatomical elements, and we have no means of distinguishing those which belong to small-pox, typhoid fever, or to pure inflammatory lesions. We are very far from being able to recognise a true parasite, perfectly distinct, and developing itself by



its own activity. Here we are concerned with a specific product, virus or miasma, which cannot represent anything beyond the disease which creates it, which is not a substantive condition, but a simply abnormal and temporary mode of being so.

*Foreign Bodies in the Air-Passages.*—M. Desprès read a report of a case in which he had extracted a foreign body from the air-passages by tracheotomy, four days after the accident had occurred. The patient was a child five and a half years old, who had swallowed a pair of blown glass earrings. Movable foreign bodies in the trachea are made manifest by more serious and enduring fits of suffocation when the patients are recumbent, than when they are upright. The attacks are not simple asphyxia; they are fits of asthma, with a special cough. The inspirations are hissing and hesitating. The respirations are cut short, and there are fits of coughing, which have the sound produced by a valve applied to the opening it is intended to close. This noise is heard at a distance, and does not resemble any sign of any other laryngeal disease, except the pediculated polypi, situated below the lower vocal cords. It is only heard during the attacks.

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## NEW INVENTIONS.

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### LIEBREICH'S SYRUP OF CHLORAL-HYDRATE.

It is to the researches of Professor Oscar Liebreich of Berlin that we owe the invaluable boon of the introduction into our medical armament of the most valuable of all hypnotics and anodynes, chloral-hydrate. It is part of the peculiar virtues of this most precious substance that not only is its action prompt, efficacious, and for the most part innocuous, but that, unlike opium and other vegetable narcotics generally, where its continued use is necessary, there does not arise any craving for increasing doses, nor does the soothing and anodyne effect of the drug wear off by the continued repetition of the minimum or normal dose. Many cases are now on record in which chloral has been employed daily for a long series of years in a normal and even unusually small dose, without ever losing its effects, and without the dose being at any time increased.

Professor Liebreich has, however, from the first called attention to the peculiar dangers which attend impurity in the solutions of the drug used. He has lately recalled attention to the subject, and reminded physicians that these impurities are apt to have a doubly deleterious effect, not only in lessening the power of the ordinary dose to procure sleep and allay pain, but in introducing directly irritating, exciting, and even vitally dangerous elements into the solution. Notwithstanding these cautions, it appears that 1, even some of our best text-books of *Materia Medica* are untrustworthy on the subject of the test of purity of chloral in substance; 2, a large proportion of the solutions in use in this country are very unreliable, and even of a dangerous character; 3, to the use of these dangerous and irritating solutions is attributed much of the occasional intolerance of chloral which is observed, and of the accidents which have occasionally been alleged to be due to "an overdose". Messrs. Corbyn, Stacey, and Co. have taken the course of producing a syrup of chloral-hydrate, which will afford all the possible guarantees of reliability and efficacy, and in prescribing which medical men will be free from all such extraneous causes of anxiety.

The Syrupus Chloral (Liebreich), to be prescribed under that name, is prepared under the superintendence of Professor Oscar Liebreich, and every bottle bears his signature as guarantee of its reliability. This guarantee is the more important that there appears to be no trustworthy test of the purity of chloral in solution.

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### PRINTED AND COATED PILLS.

The use of coated pills is steadily on the increase. Their smooth, tasteless, and odourless character, the facility with which they can be kept for any length of time, in any climate, without undergoing a deterioration, are obvious advantages. Hitherto, however, an absolute uniformity of appearance has not been without disadvantages, as, in the case of their being at all mixed, or any accident arising in labelling the vessels in which they are kept, there is no means of distinguishing them, and it is easy to believe that such uniformity in appearance of extremely different medicines may be the source of danger and considerable anxiety. The "Star" coated and printed pills of Messrs. Burgoyne, Burbidges, Cyriax, and Farries, of 16, Coleman Street, have a coating of distinctive colour for each sort of pill, so that if all were mixed together in a jar there could be no mistake or any inconvenience in selecting them for use. Moreover, each pill is stamped with its formula, and thus bears its identity unmistakably inscribed upon it; or if it is not desired to publish the formula to the patient, each pill is marked with a number to correspond with the formula. They are sold at the ordinary price. We do not hesitate to predict the general popularity of this very useful and ingenious innovation.

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### INDIAN TEAS.

Messrs. Thomas Jones and Co., of Liverpool, have brought under our notice several samples of Indian tea, such as are now being put on sale by them at moderate prices. The history of our Indian teas is most interesting, and the rapidity with which the growth of tea has been brought to the highest perfection in our Indian tea-gardens, is a source of great congratulation to tea consumers at home, not less than to all who are directly interested in the welfare of our Indian Empire. The trade in Indian tea is already enormous, but far from being so large as it is likely to be when the high flavour, great strength, and fine quality of the Indian teas are fully appreciated. They are, as a rule, better prepared, more honestly packed, of richer flavour, and greater strength than the Chinese teas which compete with them in price. They are, therefore, more economical, and in every way better deserving of the favour of the housewife. If the British matron will select for herself a good quality of Indian teas, such as those which Messrs. Jones and Co. provide, she will probably never fail to resort to Indian tea as the staple of her evening cup.

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### ORGANIC IRON-SALTS IN AUSTRALIAN WINE.

The interest which has long attached to the wines produced from the vineyards of Australia, has been greatly increased by some recent very careful researches by a highly competent and skilful chemist, Dr. C. R. Alder Wright, D.Sc. London, Lecturer on Chemistry in St. Mary's Hospital Medical School. Dr. Wright has, in the course of his very thorough and delicate investigation, ascertained what had pre-

viously been suspected from the constitution of the soil of the Auldana vineyards (largely composed of iron), and the observed effects of the wine, namely, that the Auldana wines contain an appreciable quantity of iron as an organic salt. This discovery is, dietetically, not less important than it is scientifically interesting. Dr. Wright has very clearly established that the Auldana ruby and white wines are ferruginous from natural causes, the iron being appropriated by the wine from the soil, and present in the grape in an organic combination with the organic acids of the grape. In flavour, bouquet, and natural high quality, these wines have now for some years been known to connoisseurs as fully equal to many of the most favoured vintages of Spain, France, and Germany. At the last great wine competition (at the International Exhibition, Vienna), a larger share of high-class medals fell to the Australian than to any other growers, and a diploma of honour was consequently granted to the Colony. These Auldana wines contain considerable quantities of phosphoric acids, and being thus rich in the two tonic elements so much sought after, we conclude that they will attract the attention of the physician no less than of the connoisseur, as dietetic articles of great importance.

#### THE EXCELSIOR SPRING MATTRESS.

We found lately, on a visit to the Royal Infirmary, Manchester, and to the beautifully constructed and well arranged Convalescent Home at Cheadle, an elastic spring-chair mattress in general use there, of which the experienced and able superintendent, Dr. Reed, spoke in high terms. It is uniformly elastic, is comfortable to the sleeper in every position, leaving neither hillocks nor depression; it is cleanly, light, requires only one thin hair-mattress, loosely filled, to be laid on it, is economical, lasting, and its strands easily repaired by an inexperienced person. It is a very ingenious and practical invention, and we can strongly commend it for public or private use. It is capable of various forms, and may be employed either for temporary or permanent use in the home, hospital, camp, school, or asylum, and is likely to be approved under all circumstances.

#### TWO-WHEELED BROUGHAM.

Messrs. Brainsby and Sons, of Peterborough, have invented and introduced a light two-wheeled brougham, which seems likely to become the medical carriage *par excellence*, where lightness, strength, and convenience are desired in a one-horse carriage. From the peculiar method of hanging and arrangement of the springs, the whole weight lies between the wheels, and the horse is very near his work. Nevertheless there is room enough for the doors to open in front or in the side quite widely. The carriage turns very easily, is light of draught, puts no strain on the horse, and is particularly well fitted for bad roads and a hilly country. On the other hand, its appearance is so neat that it is an elegant town-carriage. Medical men who have used it speak highly of it.

#### MISCELLANY.

DR. G. H. B. MACLEOD, Regius Professor of Surgery in the University of Glasgow, has been appointed a Surgeon in Ordinary to the Queen in Scotland, in the room of Professor Lister, who has vacated the office on leaving Edinburgh.

THE CHAIR OF PHYSIOLOGY IN ABERDEEN.—Dr. Wm. Stirling, lately Assistant in the Edinburgh Physiological Laboratory, has been appointed Professor of Physiology in the University of Aberdeen. Dr. Stirling is thoroughly acquainted with the continental methods of investigation, and has already done some good work; and his appointment is one on which both he and the University of Aberdeen deserve to be congratulated.

UNIVERSITY OF UPSALA.—The celebration of the four hundredth anniversary of the establishment of the University of Upsala in Sweden has taken place this month. In response to invitations, a large number of the European Universities sent representatives to take part in the ceremony. Among them were Professor Humphry, of the University of Cambridge; Professor Panum, Rector of the University of Copenhagen; Professor Hüter, Rector of the University of Greifswald; and Professor Rosenthal, of Erlangen. The University of Edinburgh and the Royal Society of that city have been represented by Professors Balfour, Tait, and Sir C. Wyville Thomson, with Mr. A. Buchan and Mr. Sprague. The festivities were conducted with considerable splendour, the King of Sweden, as well as the ecclesiastical and academical dignitaries, taking part in the ceremony.

THE University of Zürich has at present 324 students, of whom the majority are in the medical faculty. Of the seventeen female medical students, fourteen study medicine, and three philosophy.

THE salaries of the Professors of Chemistry and Physics in the University of Berlin (Hofmann and Helmholtz) is £1,500, independent of fees and emoluments from students. That of many other leading professors in the University is £900.

DR. JOSEPH HOOKER describes the successful transference of the Para rubber, the ipeacacanha, and the Liberian coffee plants to India, Africa, Queensland, and other countries.

DR. LOBMEYER has been appointed to the Chair of Midwifery in Agram, and Dr. Kleinwächter to the same Chair in Innsbruck.

SLATE-PAPER.—Prof. Marx, of Stuttgart, has originated an exceedingly handy method for preserving drawings or diagrams made with chalk upon a black surface for lecture purposes. It is frequently necessary to place figures or drawings upon the black-board, which have to be wiped off again, and have to be rewritten every time they are wanted. He has caused the firm of C. Lienhard, of Stuttgart, to make an endless dead-black paper, 1 metre wide, of which a piece of the necessary length is cut off and pinned upon a flat surface. When the drawing or writing is finished, the chalk is fixed upon the paper with a dilute solution of shellac, made by dissolving 50 gm. of bleached shellac in 1 litre of alcohol of about 85 per cent., and filtering. This solution is applied by means of a spray apparatus. The chalk-marks disappear at first, but reappear on drying.

DIURETIC ACTION OF WATER CONTAINING CARBONIC ACID.—In the Section of Anatomy and Physiology at the meeting of German Naturalists and Physicians in 1876, Professor Quincke spoke of the diuretic action of waters containing carbonic acid. Experiments with water containing carbonic acid and with that free from it, carried on in healthy or nearly healthy individuals, showed that the secretion of urine in the next three hours after drinking the carbonated water was richer (seven to twenty-one per cent. of the entire amount). The probable cause of the great diuresis was an accelerated absorption brought about by the carbonic acid. Other series of experiments in which the individuals took no drink on waking in the morning, showed that the urine secreted in the morning hours was clearer and of lighter specific gravity than the night urine which was passed on getting up. Also the average amount secreted in an hour was usually greater in the morning hours than in the night. These facts show that during sleep the secretion of urine is relatively small, and that after waking it is increased.



UNIVERSITY OF LONDON.—The following candidates passed the recent preliminary scientific M.B. examination :—

*First Division.*—Adeney, Edwin Leonard, Guy's Hospital; Ballance, Charles Alfred, St. Thomas's Hospital; Barron, Alexander, Owens College; Batterham, John Williams, Westminster Hospital; Berry, Harry Poole, Guy's Hospital; Blore, Isaac, the Leys, Cambridge; Cassal, Charles Edward, University College; Clegg, Joseph, Owens College; Corbould, Henry Francis, Charing Cross Hospital; Crookshank, Edgar March, University College; Cuffe, Robert Ernest Gillhurst, St. Mary's Hospital; Currie, Oswald James, Guy's Hospital; Dakin, William Radford, Owens College; Day, Donald Douglas, St. Bartholomew's Hospital; Dixon, George Parsons Naylor, St. Bartholomew's Hospital; Edmunds, Lewis Humfrey, University College; Grayling, Arthur, St. George's Hospital and Epsom College; Griffiths, Phillip Rhys, University College; Gross, Charles, Guy's Hospital; Hardy, Henry Louis Preston, London Hospital and private study; Harper, Charles Skinner, Guy's Hospital; Harris, Thomas, Owens College; Hill, George William, King's College and private study; Holman, Frederick Matthew, University College; Hoole, Henry, Charing Cross Hospital; Horrocks, William Henry, Owens College; Horrocks, William Henry, Owens College; Hughes-Jones, John, St. Bartholomew's Hospital; Hutchinson, Jonathan, London Hospital; I'Anson, Leonard Frank, Epsom College; Jefferson, Arthur John, St. Thomas's Hospital; Jones, Robert, St. Bartholomew's Hospital; Lane, Frederick Herbert, Epsom College; Lane, William, Guy's Hospital; Lewers, Arthur Hamilton Nicholson, University College; Maddison, William Thomas, King's College; Marriott, Hyde, Owens College; Martin, Sidney Harris Cox, University College; Miller, Herbert Percy, University College; Moline, Paul Frank, University College; Mortimer, Desmond Ernest John, Westminster Hospital; O'Kane, Michael, Guy's Hospital; Prothero, Richard, Liverpool Medical School, and St. Bartholomew's Hospital; Purton, Lionel Philip, University College; Rice, Bernard, St. Bartholomew's Hospital; Rice, Edward, St. Bartholomew's Hospital; Roberts, Richard Pritchard, University College; Rogerson, John Thomas, Owens College; Rygate, David John, Sellers, William, University of Edinburgh; Shaw, Harold Bailey, Epsom College; Smith, John, Guy's Hospital; Stephens, Lockhart Edward Walker, Epsom College; Stoddart, Frederick Wallis, University College, Bristol; Thomson, St. Clair, private tuition and study; Treherne, Francis Harper, St. Bartholomew's Hospital; Udale, Joseph James, Guy's Hospital; Webb, Malcolm, Owens College; Whitelegge, George Henry, University College; Whiting, John, St. Bartholomew's Hospital. *Second Division.*—Barker, Alfred James Glanville, University College; Bose, Pramatha Nath, University College; Collins, William Job, St. Bartholomew's Hospital; Day, John Roberson, University College; Dobell, Edmund Jesse, University College; Dobson, Joseph, private study; Downing, Charles, University College; Fletcher, John, Owens College; Gray, John Alfred, St. Bartholomew's Hospital; Hickman, Francis, University of Edinburgh; Hickson, Sydney John, University College; Hill, William Havelock, University College; Hosker, James Atkinson, private study; Laurent, Eugene Arthur, University College; Lister, Joseph Herbert, Guy's Hospital; McDonagh, Maitland, Alfred Derwent, University College; Maude, Frederic, St. Bartholomew's Hospital; Morley, Richard Basil, Leeds School of Medicine; Newsholme, Henry Wilkinson, University College; Pemberton, Thomas Pemberton, Queen's College, Birmingham; Rabbeth, Samuel, King's College; Richmond, John, Guy's Hospital; Salmon, Arthur Guy, St. Bartholomew's Hospital; Sanders, Charles, St. Bartholomew's Hospital; Scarth, Isaac, Owens College; Shaw, John Alexander, University College and private study; Shaw, Lauriston Elgie, University College; Wills, Arthur Thomas, Owens College.

The following candidates passed the First B.Sc. Examination: *First Division.*—Atkins, Alfred Hodgetts,

private study; Bell, Herbert Irving, private study; Cross, Charles Frederick, King's and Owens Colleges; Dixon, Samuel, Owens College and private study; Edmonds, Henry, private study; Edmunds, Lewis Humfrey, University College; Fowler, Walter, Caius College, Cambridge; Gill, Ernest Compton, private study; Gwinnell, Wintour Frederick, Royal School of Mines; Harlock, Edward, Owens College; Harrison, Hugh Erat, University College; Hill, William Havelock, University College; Horrocks, William Heaton, Owens College; Jackson, Moses John, University College; King, Alfred John, Owens College; Lane, Frederick Herbert, Epsom College; Larmor, Joseph, St. John's College, Cambridge; Marriott, Hyde, Owens College; Martin, Sidney Harris Cox, University College; Morris, Samuel Sheppard Oakley, private study; Parker, Thomas Jeffery, Royal School of Mines; Pearce, Herbert, University College; Pearson, George Henry Spencer, private study; Rowe, Richard Charles, M.A., Trinity College, Cambridge; Stoddart, Frederick Wallis, University College, Bristol; Taylor, Duncan, private study; Thomas, William Henry, Royal College of Chemistry; Walker, Daniel, Owens College and private study; Webb, Malcolm, Owens College. *Second Division.*—Blore, Isaac, the Leys, Cambridge; Bose, Pramatha Nath, University College; Drew, Edwin, private study; Hickson, Sydney John, University College; Hind, Henry Robert, private study; Patchett, Isaac, private study; Sparkes, Arthur Lee, B.A., private tuition; Thom, Peter, University of Aberdeen.—*Examination for Honours (First B.Sc. and Preliminary M.B. Examinations conjointly).* *Chemistry.*—*First Class.*—Cross, Charles Frederick, First B.Sc. (Exhibition), King's and Owens Colleges; Thomas, William Henry, First B.Sc. (disqualified by age for the Exhibition), Royal College of Chemistry, equal. *Second Class.*—Lewers, Arthur Hamilton N., Prel. Sci., University College; Barron, Alexander, Prel. Sci., Owens College. *Third Class.*—Cassal, Charles Edward, Prel. Sci., University College; Bell, Herbert Irving, First B.Sc., private study; Marriott, Hyde, First B.Sc. and Prel. Sci., Owens College, and Pearce, Herbert, First B.Sc., University College, equal; Stoddart, Frederick Wallis, First B.Sc., and Prel. Sci., University College, Bristol. *Experimental Physics.* *First Class.*—Larmor, Joseph, First B.Sc. (Arnott Exhibition and Medal), St. John's College, Cambridge; Jackson, Moses John, First B.Sc., (Arnott Medal), University College. *Second Class.*—Harrison, Hugh Erat, First B.Sc., University College, and Pearce, Herbert, First B.Sc., University College, equal. *Third Class.*—Adeney, Edwin Leonard, Prel. Sci., Guy's Hospital; Currie, Oswald James, Prel. Sci., Guy's Hospital. *Botany.* *First Class.*—Bose, Pramatha Nath., First B.Sc. and Prel. Sci., University College. *Second Class.*—Horrocks, William Henry, Prel. Sci., Owens College; Edmonds, Henry, First B.Sc., private study; Jones, Robert, Prel. Sci., St. Bartholomew's Hospital; Hoole, Henry, Prel. Sci., Charing Cross Hospital, and Pearson, George Henry Spencer, First B.Sc., private study, equal. *Third Class.*—Hill, William Havelock, First B.Sc. and Prel. Sci., University College; Rygate, David John, Prel. Sci., London Hospital. *Zoology.* *First Class.*—Hickson, Sidney John, First B.Sc. and Prel. Sci. (Exhibition), University College; Martin, Sidney Harris Cox, First B.Sc. and Prel. Sci., University College. *Second Class.*—Day, Donald Douglas, Prel. Sci., St. Bartholomew's Hospital. *Third Class.*—Bose, Pramatha Nath, First B.Sc., and Prel. Sci., University College; Edmonds, Henry, First B.Sc., private study; Salmon, Arthur Guy, Prel. Sci., St. Bartholomew's Hospital; Pearson, George Henry Spencer, First B.Sc., private study.

The following candidates passed the recent First M.B. Examination: *Entire Examination.*—*First Division.*—William Banks, University College; Hutton Castle, St. Thomas's Hospital; Norman Dalton, King's College; William H. Russell Forsbrook, Westminster Hospital; Arthur Franklin, St. Bartholomew's Hospital; Richard Gill, St. Bartholomew's Hospital; Francis Gotch, B.A., B.Sc., University College; Robert Hagyard, Leeds School

of Medicine; John Edward Hine, University College; Alfred Ernest Maylard, Guy's Hospital; Angel Money, University College; William Henry Neale, University College; James Isaac Paddle, B.A., B.Sc., University College; Edward Penny, Guy's Hospital; Bilton Pollard, University College; Tiaeliesin Wilim Owen Pughe, Liverpool Royal Infirmary and Guy's Hospital; Frank Rushworth, St. Bartholomew's Hospital; Harrington Sainsbury, University College; Robert Percy Smith, St. Thomas's Hospital; Leonard Charles Wooldridge, Guy's Hospital.

*Second Division.*—James Balls, King's College; Gilbert Harry Barling, St. Bartholomew's Hospital; Arthur Edward Buckell, University College; Wayland Charles Chaffey, St. Bartholomew's Hospital; Daniel Colquhoun, Charing Cross Hospital; David Samuel Davies, St. Thomas's Hospital; William Whitfield Edwardes, St. Mary's Hospital; Thomas Warbenton Fuller, Guy's Hospital; Robert Nightingale Hartley, Leeds School of Medicine; Alfred Harvey, Queen's College, Birmingham; Thomas Hahnemann Hayle, Owens College; John Davey Hayward, Liverpool Royal Infirmary; John Hodgson, Owens College; Arthur Jackson, St. Bartholomew's Hospital; Charles Henry Keep, Guy's Hospital; Greville Matheson Mac Donald, King's College; Henry James Michael, St. Thomas's Hospital; William Outhwaite, St. Bartholomew's Hospital; Leicester Cuthbertson Ponsford, University College; Arthur Cresswell Rich, Liverpool Royal Infirmary; Mark Feetham Sayer, University College; Robert Spence Walton, University College; William Hayle White, Guy's Hospital.

*Excluding Physiology.*—*First Division.*—Thos. Crisp, St. Thomas's Hospital; Cornelius William Suckling, Queen's College, Birmingham.

*Second Division.*—Henry Burry Pullen Burry, London Hospital and University College; George Ernest Fooks, St. Bartholomew's Hospital; George Ariei Herschell, St. Thomas's Hospital.

*Physiology only.*—*First Division.*—Charles Edward Beevor, University College; Howard Griffiths Lowe, Queen's College, Birmingham; John William Meek, Guy's Hospital.

*Second Division.*—Frederick Rowland Barker, St. Thomas's Hospital; George Shaw, Westminster Hospital; John Hinks Vinrace, Queen's College, Birmingham; Dawson Williams, University College.

The following passed the Examination for Honours.

*Anatomy.*—*First Class.*—Richard Gill, St. Bartholomew's Hospital; Tiaeliesin Wilim Owen Pughe, Liverpool Royal Infirmary and Guy's Hospital.

*Second Class.*—Norman Dalton, King's College; William Banks, University College.

*Third Class.*—Frank Rushworth, St. Bartholomew's Hospital; Alfred Harvey, Queen's College, Birmingham.

*Physiology, Histology, and Comparative Anatomy.*—*Second Class.*—Angel Money, University College; Mark Feetham Sayer, University College; Leonard Charles Wooldridge, Guy's Hospital.

*Third Class.*—Tiaeliesin Wilim Owen Pughe, Liverpool Royal Infirmary and Guy's Hospital; James Isaac Paddle, B.A., B.Sc., University College; Richard Gill, St. Bartholomew's Hospital.

*Chemistry.*—*First Class.*—Richard Gill, (Exhibition and Gold Medal), St. Bartholomew's Hospital; William Hale White, Guy's Hospital.

*Second Class.*—Leonard Charles Wooldridge, Guy's Hospital; Alfred Ernest Maylard, Guy's Hospital; James Isaac Paddle, University College (equal).

*Third Class.*—Arthur Jackson, St. Bartholomew's Hospital.

*Materia Medica and Pharmaceutical Chemistry.*—*First Class.*—William Banks (Exhibition and Gold Medal), University College; §Hutton Castle, St. Thomas's Hospital, §John Edward Hine, University College, §Bilton Pollard, University College, §Leicester Cuthbertson Ponsford, University College (equal); §Gilbert Harry Barling, St. Bartholomew's Hospital, §Mark Feetham Sayer, University College, §Leonard Charles Wooldridge, Guy's Hospital (equal).

*Second Class.*—William Henry Russell Forsbrook, Westminster Hospital, Greville Matheson Mac Donald, King's College (equal); James Balls, King's College, William Outhwaite, St. Bartholomew's Hospital (equal).

*Third Class.*—Thomas Hahnemann Hayle, Owens College, Arthur Jackson, St. Bartholomew's Hospital (equal); James Isaac Paddle, University College; Richard Gill, St. Bartholomew's Hospital. [§ obtained the num-

ber of marks qualifying for the exhibition; || obtained the number of marks qualifying for a medal.]

UNIVERSITY OF EDINBURGH.—The following candidates received Degrees in Medicine and in Surgery on Aug. 1, 1877.

*Doctor of Medicine, under the new Statutes; with the titles of the theses.*—[\*\*\* indicates those candidates who obtained Prizes for their Dissertations; \*\* those deemed worthy of competing for the Dissertation Prizes; \* those commended for their Dissertations.]—\*Andrew Balfour, Hong Kong, M.B. and C.M., 1873; Tumours. James Barbour, Scotland, M.B. and C.M., 1872; Catarrh, Pneumonia, and Pleurisy. \*\*\*Byrom Bramwell, England, M.B. (with Second-Class Honours), 1869; Clinical Reports. John William Bramwell, England, M.B., 1173; Vivisection. \*John Cameron, Scotland, M.B. and C.M., 1872; Dipsomania. Reginald Kennedy Casley, England, M.B. and C.M., 1874; The Ætiology and Treatment of Chronic Gastric Ulcers. \*John Henry Clarke, England, M.B. and C.M., 1875; Syphilis in its relation to Pregnancy. James Crabb (M.A. Aberd.), Scotland, M.B. and C.M., 1875; The Relation of Diphtheria to Croup. \*\*Andrew Stark Currie, Scotland, M.B. (with Second-Class Honours), 1874; An Inquiry into the Modes of Death from various Anæsthetics. \*James Crompton Eames, England, M.B., 1875; Osteitis Deformans. William Fairbanks, England, M.B. and C.M., 1874; Nerve-Storms with special reference to Hysteria. William Garton, England, M.B. and C.M., 1875; Some Uses and Abuses in Practice. \*\*Robert Alexander Gibbons, Canada, M.B. and C.M., 1874; The Ætiology of Internal Aneurism, and its Treatment by Iodide of Potassium and Galvano-puncture. Alexander Henry, Scotland, M.B., 1874; Observations on a rapidly fatal Case of Pericarditis from large Effusion. James Holmes, Berwick, M.B. and C.M., 1875; Care and Treatment of the Insane. \*William Allan Jamieson, Scotland, M.B. and C.M., 1865; Acute Rheumatism. Received the Degree on 21st April, 1877. \*John Johnston, Scotland, M.B. and C.M., 1874; Tubercular Meningitis in Children. \*Thomas Johnstone, Scotland, M.B. and C.M., 1874; Researches into the Actions of certain Drugs in Toxic and Therapeutic Doses. \*Abraham Emrys Jones, Wales, M.B. and C.M., 1875; Hypopyon-Keratitis. Richard Anderson Lambert, France (B.A. Trinity College, Dublin), M.B., 1874; Belladonna. James Little, England, M.B., 1874; Vaccination. Thomas Maccall, Scotland, M.B. and C.M., 1873; The various kinds of Enemata, their Uses and Mode of Administration. \*\*\*Geo. Hunter Mackenzie, Scotland, M.B. and C.M. 1873; The Physiological and Therapeutical Actions of Aconite and Aconitia. \*Frank Nankivell, England, M.B. and C.M., 1875; Rheumatic Fever. Charles Arundel Parker, England, M.B. and C.M., 1873; On Plegmasia Dolens. \*Joseph Channing Pearce, England, M.B. and C.M., 1871; Erythroxyton Coca. Robert Burnet Porteous, England, M.B. and C.M., 1868; Actions and Uses of Hydrate of Chloral. \*Henry Prescott Roberts, England, M.B., 1868; Intermittent Fever. \*\*Robert Saundby, England, M.B. and C.M., 1874; The Participation by the Walls of the Blood-vessels in the Morbid Changes of the Connective Tissue. \*\*\*John Halliday Scott, Scotland, M.B. and C.M., 1874. Nervous System of the Dog. Received the Degree on 21st April, 1877. Robert Scott, Scotland, M.B. and C.M., 1874; Treatment of Compound Fractures. Roger St. Clair Steuart, Scotland, M.B. and C.M., 1873; Exercise and the Influence of the Will upon the Voluntary and Involuntary Muscular Systems. Graham Steell, Scotland, M.B. and C.M., 1872; Scarlatina, with Charts illustrating the subject of Specific Fevers.

*Doctor of Medicine under the old Statutes, with the title of the thesis.*—Alexander Tweedie Stodart, Scotland; Leucocythæmia.

*Bachelor of Medicine and Master in Surgery.*—(A) indicates that the Candidate passed the Examination with First-Class Honours; (B) that the Candidate passed the Examination with Second-Class Honours.—John Adam (M.A. Ed.), Scotland; Robert Smail Anderson, Scotland; James John Archbold, England; Henry Morton Baker, England; (B) Isaac Bayley Balfour (Sc.D. Edin.), Scotland; Robert



Baxter, Scotland; William Baxter, Scotland; Charles George Beaumont, England; De Burgh Birch, England; Alexander Black, Scotland; George Black, Scotland; Robert Johnstone Blanchard, Nova Scotia; Albert Adolphus Boucaud, Trinidad; Arthur Henry Boucher, England; Edward Salisbury Brander, India; Henry Briggs, England; Thomas Monck Burn-Murdoch, Scotland; Francis Mitchell Caird, Scotland; Augustus Barclay Calder, Scotland; John Cameron, Scotland; Duncan Carmichael, Scotland; William Barstow Carstairs, India; William Joseph Christie, America; Herbert Edward Daniell, England; Ellis Thomas Davies, Wales; Henry George Deverell, India; (b) William Dick, Scotland; Thomas Dixon, Australia; Charles Edward Douglas, India; Harry Drinkwater, England; Lionel Druitt, England; Matthew Robinson Fairer, England; Thomas Ferguson, Scotland; Nelson Sperscott Foster, England; William Simpson Frew, Scotland; John Fyfe, Scotland; William Robert Gibson, Scotland; John Gloag, Scotland; Robert Hardie, Scotland; David Berry Hart, Scotland; Alfred Joseph Harvey (B.A. M'Gill), Newfoundland; George Henderson, Scotland; John Oke Horden, Canada; Welby I'Anson, England; (b) Charles Rumney Illingworth, England; Peter Pearson Johnson, England; Robert Colquhoun Johnston, Scotland; Walter Smith Kay, Scotland; Edward Law, England; George Le Fevre, England; Edward Jodrell Leapingwell, England; Thomas Preston Lewis, England; Andrew Walker Herdman Lindsay (B.A. Dalhousie), Nova Scotia; Arthur Charles James Rudd Lundy, Canada; James Abercrombie Lyon (M.A. Edin.), Scotland; Stanhope Hastings MacCulloch, Australia; Colin Mackenzie, Scotland; Daniel Mackenzie, Scotland; Charles M'Laren, England; James Farquharson MacLaren, Scotland; Henry James M'Laughlin, India; Roger M'Neill, Scotland; Hugh William Mann, Scotland; James Inglis Mason, Scotland; John Mowatt (M.A. Edin.), Scotland; William Murdoch, Scotland; Walter Murray, Scotland; Peter Mitchell Penman, Scotland; Albert Plain, Wales; David Thomson Playfair, Scotland; Thomas Henry Pope, India; George William Potter, England; Robert Purdie, England; William Cash Reed, England; (A) William Richardson, England; James Robbins, England; John Rowland, Wales; John William Rowland, England; Cubitt Sindall Rundle, India; (b) James Scott, Scotland; Julius Henry Shannon, Barbadoes; Oliver Cromwell Shaw, England; Thomas Henry Smith, England; James Snadden, India; Douglas Edward Stewart, Tasmania; John Stewart, Nova Scotia; (A) Johnson Symington, England; Charles Vernon Taylor, England; Alexander Thom (M.A. St. And.), Scotland; John Thomson (M.A. Edin.), Scotland; Francis Wyatt Turnham, England; James Turnbull, Scotland; (Received the Degrees on 25th November, 1876.) Charles Walter Van Geyzel, Ceylon; Howel Holland White, Wales; John Whited, England; Robert Lamley Williamson, England; Ralph William Wilson, England; Russell Elliott Wood, Scotland.

*Bachelor of Medicine.*—Edward Allen, England; (b) James Milne Chapman, Scotland; Jean Aristide Clément Daruty, Mauritius; Horace Flint, England; Duncan Forbes (M.A. Edin.), Scotland; Benjamin Jones Massiah, England; (b) Walter James Strang (M.A. Edin.), Scotland.

*Master in Surgery.*—Alexander Henry, M.B., 1874, Scotland.

The Ettles Prize for 1877 was awarded to William Richardson, M.B. and C.M.; the Syme Surgical Fellowship was awarded to William Watson Cheyne, M.B. and C.M., 1875.

UNIVERSITY OF ABERDEEN.—During the past year the following candidates, after the usual examinations, received degrees in Medicine and Surgery:—

*Degree of M.D.*—Alexander, John, M.B., C.M., Western Infirmary, Glasgow; Allardyce, James, M.B., C.M., Rakwana, Ceylon; Bailey, Samuel Henay, M.B., C.M., Nottingham; Barron, John, M.B., C.M., Berks County Asylum; Brochie, Theodore Rainy, M.B., C.M., Liverpool; Buckland, Alfred George, M.B., C.M., Lon-

don Hospital, London; Carline, William Arthur, M.B., C.M., Lincoln; Churton, Thomas, M.B., C.M., Leeds; Cran, George, M.B., C.M., Banchory-Ternan; Cruikshank, Brodie, M.B., C.M., Nairn; Dantra, Sorabshaw Homasji, M.B., C.M., Calcutta; Donald William, M.B., C.M., Bogside of Eden, Banff; Edmond, George Maitland, M.B., C.M., Stonehaven; Fehrson, James M'Call, M.B., C.M., Cradock, Cape of Good Hope; Gordon, John, M.B., C.M., New Cross, London; Jack, William, M.B., C.M., Keighley, Yorks; Jackson, Francis Edward, M.B., Manchester; James, Arthur Culver, M.B., C.M., Kensington, London; Knowles, William Bisset, M.B., C.M., Murrurundi, New South Wales; Laws, Robert, M.B., C.M., Lake Nyassa; Mearns, John Herbert, M.B., C.M., Gunnerside, Yorkshire; Milne, Irvine Kemp, M.B., C.M., Shipdam, Norfolk; Shand, Henry Miller, M.B., C.M., Port Elliot, South Australia; Skene, Thomas Alexander, M.B., C.M., Stonehaven; Skinner, Charles Gordon Lennox, M.B., C.M., Pontefract; Thomson, John, M.B., C.M., Keighley, Yorks; Urquhart, Alexander Reid, M.B., C.M., Elgin; Weatherley, Lionel Alexander, M.B., C.M., Portishead; Westland, Albert, M.B., C.M., London; White, William Leavens, Southport Convalescent Hospital; Yule, Robert Mortimer, M.B., C.M., Towie.

*Degree of M.B.*—Allan, James, M.A., Birnie, Elgin; Anderson, James, M.A., Aberdeen; Bartlett, Henry, London; Bennett, Arthur, Stawell, Victoria; Booth, James McKenzie, M.A., Aberdeen; Brencley, Algernon Dutton, Brighton; Conry, John, Dublin; Eddie, Robert, M.A., Aberdeen; Evans, Frederick William, Cardiff; Ferguson, Alexander Frederick, Cove, Kincardine; Fergusson, William, Ellon; Goldsbrough, Giles Forward, Mere, Wiltshire; Gordon, James, M.A., Walsall, Staffordshire; Gould, Peter Buck, Aberdeen; Guy, John Rapsey, Bristol; Henderson, Alexander Milne, Keith; Huxley, John Charles, Birmingham; Jay, Henry Mason, Chippenham, Wiltshire; Jones, Llewellyn Robert, Denbigh, North Wales; Macgregor, Alexander Gibson, Canisbay, Caithness; Mackenzie, John Alexander, Gairloch, Ross-shire; Moore, Charles Arthur, Thetford, Norfolk; Napier, Thomas William Adam, Montrose; Neil, James, Glen-gairn; Noble, James, M.A., Fraserburgh; Orlebar, Hotham George, St. Leonards-on-Sea; Philpots, Harris, Leamington; Porter, James, M.A., Monymusk; Richards, Thomas, Cardiff; Robertson, Frederick Freer Leslie, Cosham, Hants; Robertson, William Smith, Peterhead; Ross, James, M.A., Tullynessle and Forbes; Rudd, Leonard, Twyford, Berkshire; Schokman, George Peter, Ceylon; Shearer, Johnston, M.A., Aberdeen; Stewart, William Lemmon, M.A., Reith; Taylor, Seymour, Derby; Tough, William Robb, M.A., Aberdeen; Trail, George Shewan, M.A., Monymusk; Venning, Edmund, Cornwall; Winchester, Henry, Elgin.

*Degree of C.M.*—Allan, James; Anderson, James; Bartlett, Henry; Bennett, Arthur; Booth, James M.; Brencley, Algernon D.; Conry, John; Eddie, Robert; Evans, Frederick William; Ferguson, Alexander F.; Fergusson, William; Goldsbrough, Giles F.; Gordon, James; Gould, Peter Buck; Guy, John Rapsey; Henderson, Alexander M.; Huxley, John Charles; Jay, Henry Mason; Jones, Llewellyn R.; MacGregor, Alexander G.; Mackenzie, John Alex.; Moore, Charles Arthur; Napier, Thomas William A.; Neil, James; Noble, James; Orlebar, Hotham G.; Philpots, Harris; Porter, James; Richards, Thomas; Robertson, Frederick F. L.; Robertson, William Smith; Ross, James; Rudd, Leonard; Schokman, George Peter; Shearer, Johnston; Stewart, William L.; Taylor, Seymour; Tough, William R.; Trail, George S.; Venning, Edmund; Winchester, Henry.

Of the above-mentioned candidates, James Anderson, Wm. Ferguson, Peter Buck Gould, and Alexander Milne Henderson received their degrees in Medicine and Surgery with highest academical honours; James Allan, Arthur Bennett, Giles Forward Goldsbrough, Llewellyn Robert Jones, James Neil, Johnston Shearer, and William Robb Tough, their degrees with honourable distinction.

# The London Medical Record.

## ON THE POSITION OF SCIENTIFIC MEDICINE.

BY RUDOLF VIRCHOW.\*

IT was in April 1847, now thirty years ago, that I wrote under this same title the first paper in the first number of these archives. Now, as we commence the seventieth number, when I look back upon such a far-stretching past, I feel a desire that the young generation, just beginning to work at scientific investigations, should with us review the propositions which we elders then laid down and have since steadfastly followed.

We sought to shake off the yoke which philosophy, particularly natural philosophy, had for long laid upon science. We struggled against *à priori* speculation, we overthrew systems, we based ourselves entirely upon experience. Far from us was the intention with which some reproached us of ruining science, or setting in the place of arranged knowledge a string of disconnected facts, and sacrificing without mercy a practice a thousand years old on the altar of natural science, without offering the helpless young generation firm foothold for their work. We have not let ourselves be frightened by the number nor by the greatness of our opponents. Unconcerned, have we held on our course of individual research, in perfect faith that the new light of facts must illumine the hitherto dark problems, that every movement forward would bring some better insight into the course of particular events, and with it a view over a wider area of natural processes. And we have not been deceived. The medicine of to-day compares so little with that of the past, it is so very different from that two thousand years old traditional medicine, that at present it is already worthy to be considered an outline of a special science, which possesses everywhere in the main a full and unprejudiced relation to the past. How little are the present race of medical men able to enter into the views of the time when it was not known that the capillaries were actually vessels with a proper wall, that organic muscular fibres, the bearers of motion, displayed an organic arrangement of substance even in the smallest, that the fineness of the peripheral nerve-expansions surpassed the boldest anticipations! Yes, how little idea is there that the time in which all this was unknown lies only thirty years behind us! What trouble has it cost to overthrow the humoral pathology secured by a thousand bonds of language and popular tradition, and in its place to erect a science of the tissues, and their value in pathology and therapeutics, grounded on positive evidence and direct observation! What exertions must have been expended in ever-renewed individual labour to follow out the genetical principle in pathology, to ascertain the developmental history of particular processes, and to assign the right place to each phenomenon, whether it belonged to the primary or secondary, the active or the passive, the nutritive or functional categories! And yet it has succeeded in introducing per-

manent order into an apparent chaos; the thousands of facts have arranged themselves under a few definite laws, and in the new order make themselves easily accessible to the youthful understanding.

Certainly we were the enemies of tradition, and the sequel has done us justice therein. But we were not such barbarians, as so many are to-day, that we should have considered it right to despise or ignore tradition because it was tradition. On the contrary, we were convinced that historical knowledge only is true knowledge, that justice towards others alone offers the due counterbalance to individual conceit, and that out of the study of errors rich lessons are to be derived. We have not forgotten that. Different from the traditional as were the results of our labours, it was still our pride to connect them with the authentic parts of ancient knowledge, and to seek out the ancient sources from which the newer views have proceeded. Whoever has once tried to trace back in any research the long road which his predecessors travelled, whoever has felt how clear and easy the particular knowledge is when he knows the historical details by which it has been built up, if one detect the sources of the errors by which true discoverers were misled, yes, whoever has found that in every error there is a kernel of truth, he will not despise historical studies. But, indeed, that is no history which satisfies itself with noting down a string of fragmentary and separate propositions from every age only for the sake of the appearance of scholarship, and without any true insight into their meaning; how they but yielded, with complete intelligence, in the light of their times, the sum of the contemporary scientific hypotheses. We elders know well how to appreciate this distinction, so that from our own sad experience we can only criticise favourably whatever nonsense a man of earlier times may have written, if he clearly grasped a single one of his own propositions, and thereby tested his later acquired knowledge.

We were also enemies of philosophy, not of philosophy in general, but of the dogmatical, omniscent, self-complacent philosophy of 1840. We have our method, the now universal scientific method, not destitute of philosophy. We had respect not only for the logic of facts but for logic in general. We concerned ourselves to arrange our facts, not according to the demands of a sort of logic self-made and new for each case, but we tried to assimilate the old well-grounded and well thought-out logic. We were not blind to the advantages of literary precision. We sought sharp definitions, precise expressions, a correct terminology. We concerned ourselves to introduce scientific language into medicine, to make it impossible for any one arbitrarily, by hasty conclusions, improper generalisations, or the tendency to figurative translation of ideas, further to trouble the newly acquired knowledge and to lead to erroneous conceptions.

But nowadays it seems as if this has been all needless trouble. No one thinks of logic and precision. Whoever still feels a tendency thereto is offered in the place of the universal logic a "medical logic". Expressions have again become confused. Scarcely have we succeeded after long struggles in elucidating the history of fatty metamorphosis and cheesy transformation, than fatty and cheesy are lumped together and mixed into a compound in which it is impossible to distinguish the original elements. We strove for many years to fix the characters of white blood-corpuscles, lymph-corpuscles, and lymphatic gland-cells, and to show the dif-

\* Virchow's *Archiv*, May, 1877.



ferences between them ; only few pretended to follow us in this course, and now every round cell is a colourless blood-corpuscle, and every colourless blood-corpuscle a lymph-corpuscle, and scarcely any characteristics remain.

This is the same blind rage for imitation and scheme-making which in such a disastrous manner has entered into commercial enterprises. Because one manufactory of railway plant flourishes, ten others must be started, while no one considers whether the demand would also increase tenfold. Because this or that infectious disease is caused by bacteria, contagion in general must be of the nature of bacteria. In this respect nothing has done more harm than the crude speculations of the Darwinists. It was somewhat startling for us to see, what we had known in the old natural philosophy, how the genius of one man made an idea, which had already of *a priori* necessity acquired citizenship in the republic of science after long, severe, and not altogether undeserved proscription, again enthroned, not quite in full activity, but made the basis for a generalisation of the history of the organic world. But that men should make of a theory an article of belief, and find in a guide to further research a syncretical principle ; that men, instead of investigating, should intoxicate themselves with hypotheses ; this was still worse than the *a priorism* of the natural philosophers. These men stuffed into the new system all the good facts which had been gained in the meantime, and which, in this connection, only ran a risk of losing their true meaning among their hypothetical surroundings.

The "struggle for existence" seemed to many something quite new and unheard of, just as if the doctrines of self-preservation and the struggle for self-preservation had not been at all times the bases of Biology. The doctrine of heredity itself, which pathological experience constantly illustrates, in its new dress dazzled many otherwise little-illuminated eyes, and the attempt to observe pathological heredity from a new standpoint led many younger followers of our science to a display of learning, with this peculiarity, that the *Archives of Pathology* was least of all laid under contribution. I wish to remind you that I belong to those who did not need the new suggestion of the mutability of species as a necessary preliminary to the conception of a mechanical theory of life. In an address upon the mechanical conception of life which I delivered in 1858, a year before the appearance of the first edition of the "Origin of Species", to the Natural Science Association at Carlsruhe, I expressed this in a very definite fashion (*Vier Reden über Leben und Kranksein*, Berlin, 1862, s. 31). Not the less had I already in 1849 emphasised as a logical necessity the mechanical origin of life out of universal action. (*Die Einheitsbestrebungen in der wissenschaftlichen Medicin*, Berlin, 1849, s. 12.; *Gesammelte Abhandlungen*, s. 26, 27.) I was also at all times disposed to welcome gladly those facts which gave evidence of the changeability, or the origin, of species, and to consider them an important prize. Still I cannot but forcibly caution against accepting on the ground of a single experience hypotheses for facts, and in the ease of a general explanation forgetting the necessity of search after facts. Nothing was simpler, nothing more logical, nothing better expressed the synthesis of scientific opinion, than the doctrine of the origin of new tissues out of chemical bodies, the so-called Blastema, or histogenetical plasma. When these *Archives* began, the writings of Schleiden on the

beginnings of vegetable, and of Schwann on the beginnings of animal tissues, enjoyed even a fuller estimation. The new so-called cell-theory was the old doctrine of *generatio equivoca*, of epigenesis applied to the formative processes of the interior of vegetable and animal individuals. Nowhere was the field for the cell-theory more favourable than in Pathology. Every day brought a new confirmation of the correctness of this theory, in apparently quite real observations upon the organisation of exudations and the crude blastema. The appearances were so taking, that one could only wonder why all this had not been found out long ago. And yet all this has turned out erroneous. Of all these devoted and carefully carried out researches, so far as they concerned the origin of pathological new formations, scarcely anything remains.

Nothing can teach us a better lesson in this matter than an examination of the work of my too short-lived friend, Reinhardt, on the genesis of microscopical elements in inflammatory products (Traube's *Beiträge zur Experimenteller Pathologie und Therapie*, 1846, Heft ii, s. 145), and on the so-called fissure of cell-nuclei (these *Archives*, 1847, Bd. i, s. 528). One must have been the witness, as I was, of the unwearied powers of observation by day and night of this able and accomplished man, entirely to sympathise with me in the pain which I feel, that so much labour was uselessly employed, and only uselessly, because he was lead astray by a theory to him possible, and perhaps for certain cases and in a modified degree, admissible. *A false hypothesis seals unfavourably the fate of the best work.* It is not always want of logic which leads to false hypotheses, although that is often the case, but much more frequently it is an inherent tendency to premature generalisation, which deters observation from an unprejudiced view of the premisses, and makes the investigation one-sided.

What I have said of Reinhardt is true also of Schwann. The unfading laurels of this man lie not in the field where his name was belauded during his life. Not the developmental history of pathological products, but the history of degenerations have through Reinhardt's labours made a stride never to be retraced. His work on the origin of granular cells, in the first number of these *Archives*, should some time or other be read carefully by every physician who has any interest in the historical development of our knowledge. And what makes Schwann immortal is not the cell-theory, not the doctrine of the origin of hour-glass forms out of cytotblastema, but the establishment of the cellular origin of all tissues. On this proof later on we could build, as day by day, by individual observations, the heretical notion of a continuous propagation of cells which sprouted and grew inside the individual. This conception was the basis of the cellular pathology. But I myself used it five years before I made the first diffident attempt to publish it. For the first time in the third number of the fourth volume of these *Archives* (1852, s. 375), in the article, "Ernährungseinheiten und Krankheitsheerde", I began to untie the bonds of the cell-theory, and succeeded for the first time in the eighth volume (April 1853) in setting forth the new view with some freedom. Such recollections are useful to incite the younger generation to be circumspect, nay, still more, to be modest. They may at least contribute to explain my own reserve on the new theories. Many ask me with astonishment why I am not a Darwinist, and yet connect my own conceptions with those of Mr.

Darwin. I can only answer that I am a Darwinist at heart just as I am a cosmopolitan at heart. Yet along with this innate cosmopolitanism, or let us say unhindered humanitarianism, good national feelings are preserved, and in many respects I am first a German; so I am in science first a pathologist, and as such must I always insist that pathological formations never develop beyond the physiological capabilities of the species. We have in pathology no heterology in a Darwinian sense. That heterology of development (heteroplasia) which I defend, and of which I may well declare myself the author, affects only the tissue, not the species (*Geschwulste*, i, s. 29). All the facts we know let us only recognise a histological, but no genealogical, transformation in pathology; and I say that, just as the doctrine of *generatio equivoca* is little applicable to histo-pathology since the downfall of the cytoblastema, so since the downfall of the so-called cell-theory the doctrine of the mutability of species is scarcely tenable in pathology. Still in no way should it be said that, apart from histo-pathology and pathology especially, no epigenesis or no transmutation of species exists.

What we must learn from times past is that, before all things, pathology must be an independent department of knowledge. The amplification of the notion that it does not suffice to conceive pathology as an applied physiology, that we need much more a pathological physiology with special departments of work and special functions, formed a not unimportant part of the first article with which these *Archives* opened thirty years ago. My efforts were chiefly directed against the then flourishing tendencies of the so-called "rational" medicine and the self-styled "physiological" school. It was bitter work to attack the views of able and earnest men. Now, when the work is done, we should be conscious that this emancipation of pathology, this lifting of pathology into the ranks of a natural science, requires before all things that pathologists should guard their independence, that they should permit no outside science to intrude its hypotheses without ceremony into pathology, and lastly, that they should not allow themselves to be forced back again into the position of an useless science. But we can only do this if we remain at our posts and accomplish something ourselves. That we are labouring profitably there is, as heretofore, no better test than that we bring forth in our work fruit useful to the allied branches of knowledge, especially anatomy and physiology. We must be in a position to give them of our possessions, and we must not let it be thought that we wish only to share in goods of the others. It is not necessary nowadays to explain that scientific medicine must be the basis for medical practice. It suffices to show how completely the external character of medical practice has changed in the last thirty years. Above all, scientific methods have been introduced into practice. Therapeutics has become a biological and experimental science. The doctrine of the healing process is no longer divorced from the doctrine of physiological causes. And surgical practice itself has changed its grounds, not through the empiricism of the battle-field, but in a much more striking manner, through a completely theoretically constructed therapeutics. And so we can enjoy with light hearts the little jubilee which the *Archives* have reached as they stand between two generations. May the coming generations seek their honour in equalling those who have preceded them! These *Archives* reckon it a priceless honour

not so much to introduce new views as new men into the scientific world. They all need in their first literary efforts some external aid. Many new tendencies which strengthened themselves in these *Archives* and brought themselves into esteem have afterwards created a special organ; many observers whose youthful works were contained in these *Archives* have later started *Archives* of their own. A friendly greeting to them all! In friendly rivalry, let us steadfastly pursue our endeavour to preserve the strength of the strongest undecayed.

ROBERT SAUNDBY, M.D.

## BROCA ON CEREBRAL THERMOMETRY AS A MEANS OF DIAGNOSIS.

M. BROCA closed the session of the French Association for the Advancement of Science, lately held at Havre, by a very remarkable communication on Cerebral Thermometry, and the part which it might play in the diagnosis of diseases of the brain. To obtain the temperature, M. Broca makes use of thermometers, most carefully graduated, of which the bulb is applied by one of its surfaces against the skull, whilst the other is kept in a kind of jacket covered by layers of wool. Thus the external temperature cannot influence the mercury of the thermometer. Generally, M. Broca uses six jackets, close together, and forming a kind of crown round the head. In this manner, he obtains the temperature of six different points, corresponding in pairs. The two anterior are placed directly behind the external orbital processes, the two middle above the ear in the temporal fossa, and the two posterior on the occipital region. In order to be brief, M. Broca gives a name to each of these thermometers. Those of the left he calls F (frontal), T (temporal) O (occipital); those of the right, F', T', O'. By adding together the figures given by the six thermometers, and dividing the total by 6, the mean temperature is obtained; but each thermometer gives the temperature of the point at which it is applied, and this figure can be compared with those given by the other thermometers. It is this comparison which alone can give important indications. M. Broca's experiments were commenced about the year 1869, but it is more particularly since the year 1873 that he has applied his researches to the diagnosis of cerebral affections. To have a fixed basis, it was necessary to know the temperature of various parts of the brain in the physiological state. To learn this, he made observations on those of the externes and students in his wards who were of about the same age and the same intellectual development, and placed as far as possible in identical conditions. He wished to determine the mean temperature of the brain, the temperature of the right hemisphere as compared with the left, and, finally, the temperature of the lobes of each hemisphere (frontal, temporal, and occipital). But here a difficulty presented itself. The thermometer is, as we have said, applied against the skull, and is consequently separated from the brain by layers of substance of variable thickness. F and F', situated at the external part of the temporal fossa, are separated from the brain only by a thin muscular layer and by the bone itself, of which the thickness is inconsiderable. T and T' have no muscle; the bone is not thick; but the hair, which is pushed aside as much as possible, is a bad conductor. O and O' have also the hair, and the thickness of the occiput is greater than that of



the temporal fossa. Nevertheless, these causes of error are truly too small to explain the notable differences of temperature which exist in these various regions. The mean temperatures that we are about to give were obtained on twelve externes and students of the Hôpital des Cliniques, placed as far as possible under similar physiological conditions; the thermometer was left in each research more than twenty minutes *in situ*. The maximum temperature of the brain was found to be 94.73° Fahr. (34.85° Cent.); the minimum 91.04° (32.8° Cent.). The mean would thus be 92.88° Fahr. (33.82° Cent.). On comparing the thermometers of the F, T, and O, with those of the right F', T', and O', it is observed constantly that the temperature is sensibly higher on the left than on the right side. The mean temperature on the right is 93.02° Fahr. (33.9° Cent.); whilst that on the left is slightly above 93.2° Fahr. (34° Cent.). There is thus in the normal condition a temperature nearly two-tenths of a degree (Fahr.) higher on the left than on the right side. But what is most remarkable is, that this inequality only exists during repose. When the brain is at work, equilibrium is established. The two hemispheres give a similar figure. Must we not admit, with M. Broca, that the left hemisphere receives a larger quantity of blood; but when the brain is at work, as the right hemisphere is not so well prepared, not so active as the left, it needs to make greater efforts, and the call of blood being greater on this side, there is a tendency towards equilibrium of the two hemispheres? After having compared the right with the left brain, M. Broca proceeded to compare the different lobes of the same hemisphere, and he ascertained that the temperature over the occipital lobe was 91.25° Fahr. (32.92° Cent.); that over the temporal lobe 92.29° Fahr. (35.72° Cent.); and that over the frontal lobe 95.5° Fahr. (35.28° Cent.). By these figures, it is seen how much the functional activity of the frontal lobe exceeds that of the occipital and temporal lobes.

Such were the results obtained by M. Broca on the brain in repose. When the brain works, the figures are no longer the same. It was difficult to give to the various individuals submitted to experiment an identical labour, which was not more difficult for one than for the other. M. Broca chose the task of reading from a book which is pretty nearly equally familiar to all students of medicine. After reading aloud for ten minutes the temperature rose, from the mean 92.88° Fahr. (33.82° Cent.), to 93.13° Fahr. (34.23° cent.). We have thus a difference of nearly 1° in favour of the brain that works.

The *clinical* researches of M. Broca are no less important; and he has been able by the thermometer to demonstrate the existence of a cerebral embolon and to determine what part of the brain is deprived of its blood-supply. A long time since, M. Broca shewed that, in cases of embolism of the limbs, there are curious phenomena of temperature. He demonstrated what might be foreseen *à priori*, that the general temperature of the limb is lowered, but that there is at the site of the vascular obliteration an increase of temperature. It has been tried, in the case of ligature, to explain this apparently paradoxical phenomenon by the constriction of the nerves encircling the artery. But this explanation is valueless in the case when the obliteration is spontaneous, as in embola, the nerves which embrace the artery being in no way injured by the blood-clot. M.

Broca has explained the local elevation of temperature at the region of the embolon by establishment of the collateral circulation; the blood, no longer passing into the large and deep vessels, penetrates into the superficial vessels, dilates them, and, the peripheric circulation becoming more active, the temperature is higher. The maximum of temperature in the limb is thus at the level of the embolon. In the brain a similar difference cannot occur, because the vessels of collateral circulation are not sufficiently abundant; when a cerebral embolon takes place, seven times in ten the clot is arrested in the left middle cerebral artery, and entirely obliterates it or one of its trunks. In this case, what should theoretically occur? The blood no longer penetrating to the part of the brain supplied by the middle cerebral artery, the temperature of the corresponding thermometer should be depressed, but the circulation being more active in the frontal and occipital lobes when there is a compensatory flow, the temperature of the occipital and frontal thermometers should rise. This is the theory; now follow the clinical observations. M. Broca has collated two cases bearing on these facts. The first case was that of a woman—rheumatic—who was struck suddenly with hemiplegia, with loss of speech; by the thermometer there was found—

	LEFT.	RIGHT.
Frontal .....	95.3 (35.2)	94.6 (34.8)
Temporal .....	93.7 (34.3)	94.6 (34.8)
Occipital .....	96.0 (35.6)	91.2 (32.9)

From this table it is seen that the depression of temperature was more marked at the level of the left temporal lobe which takes its supply from the middle cerebral; the temperature of the corresponding lobe was higher on the right side, though this is contrary to what is observed in the normal condition; also, it will be observed that the temperature of the frontal and occipital lobes of the latter particularly was higher than the figure generally reached. Theory and clinical observation are in this case in perfect agreement; and we must, therefore, admit that there is a diminution of temperature at the site of the embolon. In support of this opinion, M. Broca gives a second observation, but it is so similar to the foregoing, that there is no occasion to reproduce it. In this case, the left temporal thermometer showed a less elevated temperature than the corresponding thermometer on the right; and the temperatures of the left frontal and occipital thermometers were sensibly higher than in the normal state.

Twenty years ago, Dr. J. C. Bucknill made a series of observations on the temperature of the frontal region of the insane. Fixing the average temperature of the part in persons in health at 98° Fahr., he ascertained that in cases of sthenic mania, and of melancholia with excitement, there was an increase, ranging as high as four degrees; while in chronic mania, dementia, and melancholia with depression, there was a diminution of temperature, ranging to three degrees below the average. I have had the opportunity of examining the delicate thermometer which Dr. Bucknill used in his observations, and which was manufactured for the purpose by Messrs. Horne and Co. of Newgate Street. It has a large helical reservoir, similar to that of Steward's surface-thermometer, described and figured in the *British Medical Journal* for September 29; but it differs from the latter instrument, in having a perpendicular scale, from which tenths of a degree can be read.

Dr. Bucknill's instrument appears to me to be more efficient and trustworthy, and to afford more readily precise and minute indications than the instruments employed by M. Broca, or than that above referred to as having been re-invented for the purpose of obtaining observations of the temperature of the surface of various parts of the body.

The subjoined figures represent Steward's surface-thermometer.



Fig. 1.—Steward's Surface-Thermometer; side view.



Fig. 2.—View of Under Surface, representing flatly coiled Tube containing Mercury.

ALICE M. HART.

## BERNARD AND PAVY ON THE FATE OF THE HEPATIC GLYCOGEN.

THE long disputed question as to the sugar-forming functions of the liver, and the fate of the sugar, if any be formed, still remains undecided; so far, at least, as the principal supporters of the conflicting views are concerned. Lately, M. Cl. Bernard and Dr. Pavy have published articles on the subject, of which a summary is subjoined.

Bernard's latest conclusions (*Comptes Rendus*, 1876) are that the existence of sugar in the blood is a constant and permanent phenomenon, and a direct expression of nutrition; that the proportion present in the blood is nearly the same always, being unaffected by the nature of the food, by abstinence or by starvation; and that there exists in the living organism a glycogenic function which maintains and regulates this proportion, rendering it independent of the variable conditions of digestion. The proportion is sensibly equal throughout the arterial system (1 to 1.5 grammes per 1,000), variable in the venous system (.06 to .08 in the portal vein, 3 to 7 in the hepatic vein). The blood, therefore, is deprived of sugar in its passage through the organs of the body,

but is enriched again by traversing the liver. The vena cava inferior, for example, in the pelvis, contains less sugar than the corresponding arterial blood, and this is the case as far as the liver, where the sugar is suddenly increased. The dilution of this rich hepatic blood, however, with that of the two cavae, leads to the proportion of sugar in the right ventricle approaching closely that of the blood in the left ventricle, which shows also that there is a less sensible destruction of sugar in the pulmonary than in the systemic capillaries. The blood was drawn by a system of catheterisation from the large vessels. All comparisons were done simultaneously, and the analyses were made immediately, to avoid the loss of sugar that occurs after death. Bernard's method of analysis consisted in boiling freshly drawn blood with an equal weight of sulphate of soda, to separate out the sugar which is then removed by filtration. Titration is performed with Fehling's solution; but, on account of the small amount of sugar present, only one cubic centimetre of the solution, to which 20 to 25 cubic centimetres of potash have been added, is acted on.

Pavy's conclusions are opposed to those of Bernard. He points out (*Proceedings of the Royal Society*, June 1877) that the very rapid changes which take place in blood under altered conditions of the system render it necessary that great precaution should be observed so as to obtain blood in its natural condition; that the animal from which it is drawn must be perfectly tranquil, and that it should be procured as soon as possible after death. In the blood of sheep and bullocks he finds  $\frac{1}{4}$  per 1,000, in that of dogs  $\frac{2}{3}$  per 1,000. His analyses show no material difference in the amount of sugar in arterial and venous blood. The mean results of seven examinations of dog's blood indicated the amount of sugar it contained in parts per 1,000 to be as follows:—.751, .786, .700, .766, .786, .921, .803—giving an average of .787. The blood of sheep yielded .470, .490, .517, .559, .569, .526, or an average of .521. Bullock's blood gave .703, .525, .492, .456, .499, .588, or an average of .543. The blood of a dog killed by pithing gave: crural artery, .799, .791, mean .795; jugular vein, .793, .791, mean .792. In two other dogs the vessels were exposed under chloroform, and when the effects of the anæsthetic had passed off, the exposed vessels were drawn forward and openings made into them to allow of the simultaneous escape of blood. The analyses were commenced before coagulation had time to occur, and the results were as under: No. 1, carotid artery, .806, .817, mean .811; jugular vein, .808, .788, mean .798; No. 2, carotid artery, .854, .873, mean .863; jugular vein, .863, .896, mean .879.

Dr. Pavy's process consists in separating the sugar from the blood in the same way as Bernard, causing it to reduce a cupric salt, and then weighing the copper of the suboxide thus formed after it has been electrolytically separated on the platinum electrode of a battery. These are the details.

"A certain volume of blood—about 20 c.c.—is taken for analysis, and first mixed with 40 grammes of sulphate of soda; the whole must be subjected to weighing in detail, so that the precise weight of the blood taken may be known. To this mixture, contained in a beaker of about 200 cubic centimetres capacity, about 30 c.c. of hot concentrated solution of sulphate of soda are added, and the whole contents heated until a coagulum is formed. Filtration is then performed, and the coagulum thoroughly



washed, so that all traces of sugar may be removed. The liquid thus obtained, from having been run and squeezed through muslin, is slightly turbid, and must be boiled again and filtered through paper to render it perfectly clear. It is now ready for the application of the copper test. Being brought to a state of ebullition, about 10 c.c. of the potassio-tartrate of copper solution (or sufficient to secure that the test-liquid is left in excess), are added, and brisk boiling continued for a minute, but not longer. In this way a reduction of the oxide to the suboxide of copper is effected by the action of the sugar present in the solution. The liquid is then filtered through glass wool. The suboxide, having been collected and washed from excess of the copper test liquid, is next dissolved by a few drops of nitric acid, a small quantity of peroxide of hydrogen having been previously added in order to effect oxidation and consequent ready solution. The copper present in the liquid is now deposited by the agency of galvanism. The positive pole of the battery is formed by a platinum spiral coil, around which and forming the negative pole is a cylinder of platinum foil: upon this the copper is slowly deposited in a pure metallic form. The operation is continued until the appropriate test shows that the whole of the copper has been thrown down. The period ordinarily required to effect this does not exceed 24 hours. The platinum cylinder is next removed, and instantly plunged first into distilled water and then into alcohol. After drying in a water-oven it is ready for weighing; the difference in the weight of the cylinder before and after the operation gives the amount of copper deposited. From the amount of copper deposited, that of the sugar existing in the blood analysed may be accurately calculated. Five atoms of the cupric oxide of the test solution are reduced by 1 atom of glucose: it follows that 317 parts of copper represent the equivalent of one part of glucose, or the relation stands as 1 of copper to 0.5678 of glucose. Therefore to ascertain the amount of sugar the weight of the copper has to be multiplied by 0.5678."

Pavy alleges that his gravimetric process is more reliable and accurate than the volumetric one employed by Bernard; that his numbers show more uniformity than Bernard's, whose figures, he says, exhibit much discrepancy and a want of consistency; his analytical process not only being devoid of precision, but calculated to give rise to fallacious results, as the "entire system was based on errors."

A quotation may be given here from Bernard (*Comptes Rendus*, August, 1876). "The coagulation of the blood by the sulphate of soda, and the estimation of the sugar by Fehling's solution, constitute a very delicate proceeding, which seems to me exempt from every source of error. I have assured myself that there exists in the blood treated by sodic sulphate no substance besides sugar which can give rise to a reduction of the copper. On the other hand I have verified, by a method of control, that the proceeding and the formula I employ give a great exactitude (to 1-10,000th nearly). I shall give some numbers as examples. To several samples, blood deprived of sugar, or in which the sugar had been comparatively estimated, a known quantity of sugar was added, and by the sulphate of soda and Fehling's solution, making use of the formula  $S = \frac{8000}{n}$ , we found exactly the amount of sugar added. Here is the result of five experiments of control:—

Numbers calculated.			Numbers found.			Difference.
1.	...	1.26 sugar per 1,000	...	1.23	...	0.03
2.	...	1.10 " "	...	1.10	...	0.00
3.	...	2.28 " "	...	2.20	...	0.08
4.	...	3.03 " "	...	3.00	...	0.03
5.	...	1.58 " "	...	1.56	...	0.02

The following are the results of a series of analyses made by Pavy to ascertain the rapidity of the spontaneous disappearance of sugar from blood:—

No. 1.	Taken immediately after death	...	mean	...	.786
	" after one hour	.....	"	...	.739
No. 2.	Taken immediately after death	...	"	...	.700
	" after 1 hour	.....	"	...	.670
No. 3.	Taken immediately after death	...	"	...	.766
	" after 1 hour	.....	"	...	.751
	" 23 hours	.....	"	...	.285
No. 4.	Taken immediately after death	...	"	...	.786
	" after 1 hour	.....	"	...	.728
	" 24 hours	.....	"	...	.302
No. 5.	Taken immediately after death	...	"	...	.921
	" after 1 1/4 hours	.....	"	...	.793

A somewhat parallel series of experiments by Bernard (*Comptes Rendus*, June 19th, 1876) show a remarkable discrepancy with the foregoing. Bernard's figures give:—

Amount of Glucose immediately after death	...	1.070
" " after 10 minutes	.....	1.010
" " 30 "	.....	0.880
" " 5 hours	.....	0.440
" " 24 "	.....	0.000

T. CRANSTOUN CHARLES, M.D.

## HEYDENREICH ON THE PARASITES OF RELAPSING FEVER.

IN a recently published pamphlet (*Ueber den Parasiten des Rückfallstypus*, Berlin, 1877), Dr. Heydenreich, of St. Petersburg, gives the result of his observations on the blood of patients suffering from relapsing fever.

The blood was withdrawn for examination by means of small cupping-glasses, defibrinated by stirring with a glass rod, and then preserved in capillary glass tubes. The parasites (spirochæte) were constantly found as very fine uniform threads coiled in a close spiral, and subject to a constant active movement, interrupted by occasional pauses. Their delicacy was so extreme and their colour such that they were with difficulty seen when alone in a field of blood-serum, but they were more easily recognisable and appeared thicker in saliva and a solution of salt, as well as when surrounded by blood-corpuses or other solid elements. Their length varied from twice to three or six times the diameter of a red blood-corpuse, that is, from .012 to .043 millimetre; and if any appeared to be longer than this, they were always found to consist of two or more fibres, which on longer observation separated from one another. All attempts to detect any structure in them were unsuccessful. Heydenreich describes three kinds of movement—firstly, a movement of rotation on their long axis; secondly, movements backward and forward; and, lastly, movements from side to side in all possible directions, by which the form of the fibre is constantly changed, becoming at different times angular, curved, or serpentine. But he regards the second and third kinds as the result of variations in the direction of the spiral movement, or of differences in its intensity at different points in the length of the fibre. Another peculiar feature of the parasites is their tendency to adhere

to one another and to other formed elements, so that on the one hand fibres were occasionally seen long enough to stretch across the field of the microscope, as well as branched figures, stellate bodies, and thicker masses with radiating threads; while, on the other hand, fibres were often seen towing after them a red blood-corpuscle, or distorting the latter in their efforts, so to say, to escape from it. The larger clumps of fibres were rarely present in flowing blood, but formed when the fluid was more stationary; and the author suggests that where the blood habitually circulates with less velocity such agglomeration might form and be the cause of thrombosis, infarcts, and hæmorrhages.

Of the greatest interest are the observations of Heydenreich on the influence of different temperatures upon the activity, and presumably the life, of the parasites. By means of a suitable apparatus, he was enabled to maintain for several days a constant temperature, *i.e.*, a temperature varying at most a few tenths of a degree centigrade. Out of thirty experiments, seven were made with the ordinary temperature of a room, namely, from 15° to 22° Cent. (59° to 71.6° Fahr.); four with the normal temperature of the body, from 37° to 38° Cent. (98.6 to 100.4° Fahr.); nine with pyrexial and hyperpyrexial temperatures, 39.5° to 46° Cent. (103.1° to 114.8° Fahr.); and ten with low temperatures, namely, from zero (Cent.) downwards; and the results were found to be quite consistent. The activity of the parasites when removed from the body lasted longest at the temperature of the room, the time required to kill them varying in the seven experiments from 2½ to 9 days. The ordinary body-heat, on the other hand, was distinctly prejudicial, and the duration of the activity under its influence was only 15 to 21 hours. Fever heat stopped the movements in 4 to 12 hours, and hyperpyrexial temperatures in 1½ to 3¼ hours. Similarly, extreme cold killed in 8 or 9 hours, while less degrees (6° to 7.5° C. = 42.8° to 45.5° Fahr.) permitted movement to continue for two or three days. It was also observed that both in the case of very high and very low temperatures before actual death took place a state of rigidity was assumed, from which the fibres could again be restored to activity on being subject to the ordinary heat of the room.

The following are the results of nine experiments with reagents. Dilution of the blood with an equal quantity of water led to a somewhat earlier death of the parasites, and with a much larger dilution they died considerably faster than in the untouched blood. Chloride of sodium, added to blood diluted with an equal quantity of water, had scarcely any influence when in the proportion of  $\frac{1}{10}$ ,  $\frac{1}{5}$ , or  $\frac{1}{2}$  per cent., but hastened death by a day when in the proportion of 1 per cent., and by about two days when forming 2 or 4 per cent. Saliva added in equal quantity stopped the movements in about half a day, and urine under the same circumstances in less than 18 hours. Exposure to air had but little influence on the movements, and pure oxygen did not counteract the fatal influence of a temperature of 41° to 41.7° C. (105.8° to 107° Fahr.)

With regard to the stages of the disease in which the parasites are most abundantly developed, the observations of Heydenreich agree in the main with those of other writers (Obermeier, Naunyn). Forty-six patients formed the material upon which the observations were made, and the blood was examined in 54 attacks, in 21 intervals, and in 44 periods of convalescence. In all of the 54 attacks the author

was able to demonstrate the presence of the parasites in the blood, but on different days and at different hours they were found in very varying quantity, and no rule could be established as to their predominance at this or that period of the attack. Often they appeared and disappeared on one and the same day. But it was uniformly observed that any elevation of temperature, whether the commencement of a true attack, or the rises following upon pseudo-crises, remissions, and intermissions, was preceded by the appearance of the spirochæte. Towards the end of the attack, some time before the beginning of the crisis, the parasites disappeared from the blood without leaving a trace. They were entirely absent both during the periods of apyrexia and in convalescence, and they were never found later than the last attack of fever, even when convalescence was retarded by the supervention of typhoid, facial erysipelas, or nephritis. Moreover, complications in the course of the illness had no influence whatever on the appearance of the parasites, nor on their size, form, movements, and relation to temperature.

The great variations in the absolute quantity of parasites present led Dr. Heydenreich to think that there might arise many generations in one and the same febrile attack. He supports his argument also by their relation to temperature; for, though in blood drawn from the body and exposed to the temperature of the room some parasites lived 12 or 15 days, many, on the contrary, became motionless just as soon as if they had been subjected to a high febrile heat. But parallel experiments with blood drawn from the same patient clearly showed that the spirochæte died earlier at fever-heat than at the normal, and earlier at the normal heat than at the temperature of the room; whence it is inferred that in the first case the threads were already in different conditions of vitality before the commencement of the experiment. Moreover, it might be argued, if the attack depended on a single generation of parasites, subject to a gradually increasing temperature until it was finally annihilated, that the vitality of those removed in the early days of the fever, and hence subjected for a shorter time to a less degree of heat, would be in a proportionate degree greater than that of those removed later; but no such uniformity was observed. The author therefore concludes that the attack of relapsing fever is preceded by the appearance of threads, which rapidly perish in consequence of the increased temperature. In the course of the same attack, however, these are replaced by others, which partly appear during the lifetime of the first, partly after their death. And he thinks that the occasional variations in the temperature, the pseudo-crises, remissions, and exacerbations which often have no connection with the diurnal fluctuations of the normal temperature, may be explained by irregularities in the rapidity with which one generation follows upon another.

Of nine cases in which jaundice was present, four presented all the symptoms which have been described under the name of bilious typhoid. In all these cases parasites were present during the attacks and absent in the intervals, precisely as in other cases of relapsing fever.

The close connection between the spirochæte and relapsing fever was further confirmed by the negative results of some 200 observations in other diseases, including typhus, typhoid, pyæmia, pneumonia, erysipelas, and tetanus. In none of these was anything like a spirochæte observed.

The more interesting part of the work devoted to



the parasites of relapsing fever is preceded by an account of the changes in the morphological elements of the blood in this disease. There was a decided increase in the proportion of the white corpuscles to the red, which was greatest in the last few days of the attack, and immediately after the crisis. It was just at the same periods that the following bodies, which are, however, found in other inflammatory and infectious diseases, made their appearance with a suddenness and in a quantity that are quite peculiar to relapsing fever, and the author suggests that these bodies have their origin in the spleen, by the contraction of which they are extruded at the end of the fever. They were, besides white corpuscles, firstly, large masses of protoplasm, either clear, or granular, or fatty, or containing red blood-corpuscles, or vacuoles; secondly, granules and aggregations of granules; and, lastly, epithelioid cells, which had mostly undergone fatty degeneration.

F. TAYLOR, M.D.

### MEYER ON THE TREATMENT OF GENERAL PARALYSIS OF THE INSANE.\*

THE mental disease known by the name of General Paralysis of the Insane has been very narrowly investigated ever since its recognition half a century ago, and when scientific inquiry into its pathology early led to the certainty of its rapid and fatal course, the deleterious conclusion that it was proof against all therapeutic encroachments was arrived at. From time to time cases of spontaneous cure have been published, but these have not been able to shake the conclusion as to its incurability. In 400 cases of general paralysis observed by Dr. Meyer, not one case of spontaneous recovery occurred. Dr. Meyer is persuaded, from his clinical and anatomico-pathological researches, that the disease from the beginning is essentially a chronic encephalitis, and nothing more; and, further, that the disease is at first confined to the convexity of the fore-half of the hemispheres; that it very frequently tends to meningitis more or less complete. These facts suggested the applicability in this disease of the method of treatment adopted in analogous disease of the spinal cord, by energetic counter-irritation.

Acting upon this principle, Dr. Meyer has in all cases adopted a method followed by Jacobi, of Siegburg, in the treatment of chronic mental disease, of keeping open a suppurating surface through some months, and hopes that the results which he records may induce its adoption, not in chronic cases as met with too often in Asylums, but at an early stage in general practice.

The head is to be shaved over the centre of the fore part of the skull-cap for a space as large as half the palm of the hand. On the central portion of the cleared space as much tartar emetic ointment as will cover a shilling is to be rubbed in. This first application must be well and energetically made, and the ointment may be applied with a linen compress, or with the ball of the thumb. At the second application caution is required, in order that the already loosened epidermis may not be torn away, for the deprivation of the cuticular layers causes exquisite pain, and the procedure is not useful. A third application is, as a rule, not required.

In the course of three or four days the swelling extends over the frontal region and the face, and more rarely to the back of the head and neck. The eruption of pustules by this method is considerable, the scab coming off in one piece. As soon as the place shows signs of swelling, it is covered frequently with warm poultices. In a few days a crust comes off, and leaves a suppurating surface, which is often kept open for two or three months. As soon after the establishment of this suppurating surface as the patient's strength will permit, the internal use of iodide of potassium is commenced. The diet is to be digestible, and of a highly nourishing character. The patient is to be sent out much into the fresh air, permitting a little light work, if his mental state allow of it. Work should be done during the early and evening hours during the summer, as the patient is to be guarded from the heat. Baths are to be avoided as likely to produce head-congestion.

This treatment has been adopted by Dr. Meyer during the last fifteen years in seventeen cases of general paralysis. Of this number two are excluded as not fulfilling all the conditions; of the remaining fifteen eight were cured. One of these patients has been two years at his old employment, and has not had any return of symptoms. Two or three were seen three years after their discharge, and were still remaining well and following their employments. Four of these cured paralytics are still under observation, some time after the date of their recovery.

These results so greatly exceeded all expectation, that Dr. Meyer confesses he felt inclined to attribute the result to chance or a coincidence; but the abatement of symptoms followed so closely upon the active measures taken that he felt encouraged to publish the results with a view to a wider induction from extended experiments.

Naturally, in selecting cases for treatment, a choice was given to those cases where the duration of the disease was short, but no others were rejected where it was thought that the disease had not obtained such a mastery of the brain as to render it fruitless. Dr. Meyer then quotes from a work on the Pathology of General Paralysis a passage describing the probable state of the brain in the early stages of general paralysis, and expresses a belief that in such conditions his mode of treatment will be found most useful. The quotation is to the effect that in the early stages of the disease the rapid alternations from states of dementia to those of mental activity, and the still more rapid changes in the severe disturbances of motility are consistent only with changes in the circulation or nutrition of the brain as pathological antecedents.

The following cases are appended.

Of the first there was only an incomplete record, but recovery took place after the case was regarded as hopeless.

The second case was that of a civil officer, aged 31, who had had syphilis in 1865, for which he was treated, but had later a relapse. Shortly after marriage in 1867 he was run over by a wagon, and the back part of his head was severely bruised; since that time he suffered much from headaches, to which he had occasionally been subjected since childhood. In the summer of 1868 he had an apoplectic attack, and was unable to speak or write for four days; in 1869 increased headaches, melancholy, with refusal of food. Admission into the Asylum was followed by intellectual enfeeblement, mania, and the ordinary signs of general paralysis. On December 3rd the ointment was applied, and by the 14th a suppurating

\* *Berliner Klinische Wochenschrift*, May, 1877.

surface had become established, and at this time he began to take iodide of potassium. On the 20th he had again become quiet, was more intelligent, and said that he felt relieved in the head. At this time he told the above facts as to his previous history. From this time the patient began to recover, and by the middle of January there was no sign of mental derangement remaining. On his discharge, May 15th 1870, he was of sound mind, the pupils were equal, but there was a slight hesitation of speech remaining, which was observed when he was again seen two years later. He had also recovered the power of writing clearly and evenly.

In the second case there was a history of syphilis, and the patient had developed all the characteristic symptoms of general paralysis in August, 1871. He came under treatment in April, 1872. In January of this year he had had two apoplectic attacks accompanied by high fever. On the 6th of April the tartar emetic ointment was used, and by the 19th there was a large suppurating surface, which was kept open until the beginning of July. Improvement commenced immediately, and he was discharged cured August 23rd 1872, since which time he has remained perfectly well, doing all his duties as a bookkeeper in a merchant's warehouse.

In case four there was no history of syphilis, but one of sexual excess. The patient was admitted on May 28, 1873, with all the usual symptoms of general paralysis, and in a state of mania. On the 1st of June the tartar emetic ointment was applied, and the issue kept open until the middle of August, during which time he took iodide of potassium. On the 20th of June improvement was noted, and at the beginning of August he became quite rational, but he was not clear of motor symptoms until September. On his discharge, October 13th, 1872, his handwriting was again clear and distinct. He has followed his employment since, and has been under observation, remaining perfectly well.

Case five was that of a country doctor, aged 34. There was no syphilitic history, but one of overwork and sexual excess; alcoholic craving; and since June several incomplete apoplectic attacks, which always left a difficulty of speech. He was admitted in the middle of July with all the symptoms of general paralysis, and in a state of acute maniacal excitement. On August 8, the ointment was applied in the usual place, and the administration of potassium iodide commenced. By the 16th a strongly suppurating surface was established, which was kept open until December. Improvement commenced to set in almost as soon as suppuration was established, and in December he was discharged perfectly cured. There was, however, still a slight degree of hesitation in long speeches. Two years later he was seen, and was then perfectly well and in full practice.

Case six, that of an advocate at 46, gave a history of syphilis in early life, with later sexual and alcoholic excesses. He was admitted December 3rd, 1874, with well-marked symptoms of general paralysis, with wild mania and filthy habits. The treatment by potassium iodide and the application of tartar emetic ointment was at once commenced. Strong suppuration was established by the 15th of December, and he had become quieter, and said that he felt free in the head. At the end of January, 1875, the pupils were equal, but there was still at times hesitation in speaking, and his judgment seemed still impaired. The treatment ceased at the beginning of February, upon his being sent to another Asylum. He has since been discharged, and has followed his employ-

ment for a year and a half, but a short time ago became insane again.

Case seven was that of a clerk aged 24. There was no history of syphilis, but he had led a dissolute life, and had a father and sister insane. He was admitted May 8th, 1876. The first symptoms had commenced a month previously. The ointment was used on the 22nd of May, but the iodide of potassium was discontinued at the end of June on account of his debilitated condition. Improvement was noted in October, and in December his mental state was that of health, but his movements were still slow, and in February, 1877, the articulation was still slow and halting. In April of this year he was to all appearance cured.

Case eight was that of a shoemaker, aged 34; in early life he had syphilis, and since the summer of 1876 has been insane. First he was melancholic, and then maniacal. On admission, he had all the signs of general paralysis. On February 12, after his nutrition had been improved, the ointment was applied, and the potassium iodide taken. By the end of February there was established a suppurating surface, and at this time a truly surprising improvement had commenced. At the end of April there was no mental or motor defect. He still remains under observation. The severe inflammation to which the scalp is subjected in this treatment renders it possible that the periosteum may be involved, and exfoliation occur. This has happened in three of Dr. Meyer's cases. In case No. 5 of the cured ones, although the exfoliations were not inconsiderable, no bad result followed. To explain the mode of operation of the issue upon the diseased condition is, of course, very difficult. Dr. Meyer believes that the disturbances involved by the inflammation and long-continued suppuration react upon the blood- and lymph-vessels at a distance, removing stasis and hastening the reabsorption of exudation. In favour of this view is the fact, observed in all the cases, of the sudden deliverance from intracranial pressure directly a copious suppuration had been established. In conclusion, Dr. Meyer sounds a warning note as to the disastrous effects he has seen follow the energetic antisyphilitic treatment by mercurial ointments, subcutaneous injections, perchloride of mercury, &c. That the early periods of syphilitic infection are not prejudicial to his mode of treatment, Dr. Meyer thinks the above cases prove.

CHARLES ALDRIDGE, M.D.

#### VON SOKOLOWSKI ON THE USE OF THE COLD DOUCHE, AND FRICTION WITH TOWELS WRUNG OUT OF COLD WATER, IN CASES OF CHRONIC PHTHISIS.\*

DR. A. VON SOKOLOWSKI is Dr. Brehmer's assistant at the Görbersdorf (Silesian) Sanatorium, where a very great number of phthisical patients are treated every year. He remarks that a variety of opinions prevail amongst medical men as to the propriety and usefulness of the cold douche in pulmonary phthisis. Some consider it of the highest utility; others regard it as quite unfit not only for consumptive cases, but for all analogous ones. It occurred to him, therefore, that it would be useful to carefully note the effect of this treatment in the cases under his observation at Görbersdorf. The results are as follows. A hundred

\* *Berliner Klinische Wochenschrift*, Nos. 39, etc., 1876.



and five cases of consumption were treated by the cold douche. These may be subdivided into three categories. 1. Patients with deposits of very limited extent (infiltration) in one or both apices of the lung, and patients only suffering from catarrh of the apices, with marked hereditary taint. These deposits were partly recent, partly of old date; sixty-six patients belonged to this category. 2. Patients with extensive infiltration, without any demonstrable breaking down (destruction) of tissues, and whose general condition was good; nineteen patients belonged to this class. 3. There were thirty-three patients who had physical signs of breaking down, or softening of the deposits (destruction of lung-tissue), yet with the general health little impaired. This class includes both limited and extensive deposits. Of the whole number, sixty-six had no hereditary history of phthisis, whilst in thirty-nine cases the history of phthisis in the family was perfectly clear and indubitable. The hydrotherapeutic treatment was supplemented by attention to diet, and an air-cure. The duration of the hydrotherapeutic treatment was, on an average about three months.

The final results of the treatment were as follows. Of the hundred and five patients, (1) thirty-nine left the institution with so much improvement that they might be considered as perfectly, or at least for all practical purposes, cured; (2) thirty-four left it with very considerable improvement; (3) nineteen with some improvement; (4) seven left it with no improvement; (5) two of them were worse rather than better; and (6) four of them died. We thus see that thirty-nine of the hundred and five cases, or 37 per cent., terminated in recovery. Those which recovered perfectly were for the most part cases of limited deposits in the lungs. In such cases, after the treatment, there was considerable improvement of the general condition, gain of weight and strength, with increased appetite, and perfect absence of all pathological symptoms as regards the organs of respiration, though one or two may have shown slight variations from normal percussion-tones, and prolonged expiration at the apex of a lung; but this slight dullness at the apex is sometimes consistent with recovery, as it may be due to thickening of the pleura. It is not pretended that there is absolute freedom from relapses under other conditions of climate and modes of life. Years are required to settle this point affirmatively. In the second class, or those relatively cured, must be placed those cases in which there had been considerable destruction of lung-tissue, with subsequent contraction, etc. Their general health was improved; all hectic symptoms, where such were present, had disappeared; but the damaged lung remained as a sort of *caput mortuum* to the injury of the organism. Such cases must of necessity be very liable to relapse. If the 37 per cent. seem a large proportion of success, it is to be remembered that the cases subjected to this douche treatment were selected from those suffering from the most favourable forms of the disease. Only 25 to 30 per cent. of the Görbersdorf patients were subjected to the douche. Only eleven of the cured cases had hereditary phthisis. Of the four fatal cases, one died of typhlitis and general peritonitis, of a purulent kind; one, after hæmoptysis, died of tubercular meningitis; a third, after hæmoptysis, died of acute and rapid phthisis; as did the fourth and remaining case.

As regards the immediate effects of the douches, and those of the combined or repeated douches, they are as follows. 1. The capillary vessels of the

skin become accustomed to a sudden contraction (shown by pallor, cold feeling, and emptiness) and then become dilated for a longer time (shown by purple red colour, and a pleasant feeling of warmth). 2. There is an increase of cutaneous respiration. 3. There is increased tissue-metamorphosis, and improvement of the general condition of the patients. The skin is too often neglected in consumptive patients, and at first the douche often proves very unpleasant. The reaction is promoted by vigorous rubbing with towels, and very soon the skin begins to resume its functions, and the douche is no longer unpleasant.

Sokolowski considers the douche indicated—1. In those predisposed to phthisis, but not actually consumptive, as (1) children of phthisical parents, whilst growing up; (2) people who have very sensitive skin and mucous membranes, and are always taking cold; (3) in so called "primary catarrh of the apices"; (4) in chronic bronchial catarrh, not definitely localised with history of consumption in the family; (5) in chlorosis of constitutional or hereditary type. II. In people already suffering phthisis: (1) in all the acquired inflammatory kinds, if the general condition of the system be good; as (a) in limited deposits in one or both apices of lungs; (b) in more extensive lung-changes, *i.e.*, when the size of the deposit is larger, even with considerable breaking down of tissues in consequence of chronic, stationary, phthisis, without pyrexia; [in a note he says that slight evening exacerbations of temperature do not forbid the use of the douche; and he refers to a paper of his in the *Deutsche Zeitschrift für Praktische Medizin*, No. 46, 1875]; (2) in constitutional inherited phthisis when the lung-symptoms are still limited and slight, and the general health is good. But improvement should already have set in under the use of appropriate diet, and fresh air. In summer the douche may be used freely. In winter we must be far more cautious. Pharyngo-laryngeal catarrh is a decided contra-indication against the use of the douche in winter. Not only the time of year, but the weather of each day must be taken into account. The chief contra-indications are: 1. Great general debility, apart from lung-symptoms; very anæmic people mostly belong to this class; 2. Well-defined hectic symptoms, even when not very severe; 3. When no improvement results from the use of the douche, or there is faulty reaction, a great feeling of weariness, long continued chilliness, faintness, etc., produced by its use. As temporary reasons forbidding its use are: 1. The menstrual period; 2. Severe nasal catarrh, especially in winter; 3. Hæmoptysis; 4. Well marked muscular rheumatism, and other complications or incidental maladies. Whether a tendency to hæmoptysis forbids the douche is much disputed. Sokolowski thinks the objection theoretical. The experience of these hundred and five cases is against it; 70 per cent. of them had more or less hæmoptysis; 27 per cent. rather considerable losses of blood. In the eight months of douches there were only nine slight, and four severe attacks of hæmorrhage—only once immediately after the douche—thus, in only fourteen of the seventy-four was there any bleeding from the lungs during the treatment. Indeed, slight hæmoptysis was several times checked by the douches—once in his own person, for Dr. Sokolowski was himself a patient at Görbersdorf in 1873 and 1874, and made use of the douche. He remarks that both the profession and the public attach an undue importance to slight bleeding from the lungs. He has known a patient lose ten pounds in weight in two or

three days after a trifling loss of blood. Others became melancholic or mad. Others again fainted at the sight of a drop or so of blood. Only special forms are dangerous, such as the aneurismal, etc. The moral treatment is of vast importance in all cases. The cold douche will actually check some cases. Many hæmorrhages from the lungs occur in the early morning with subnormal temperatures, and slow, small pulse. This *pulsus rarus et parvus* (sixty in his own case) is often the precursor of bleeding; doubtless due to congestion of lungs and weakness of heart. He has known a glass of wine and a walk check some hæmorrhages. As to the kind of douche, he agrees with Braun, in his *Balneotherapie*, (Berlin, 3te Auflage, 1873, p. 249), that few things require more skilful control than the douche, and few are so dangerous as this in the hands of an enthusiast. The natural temperature of the water from the hills, used at Görbersdorf, is from  $+4^{\circ}$  to  $+10^{\circ}$  Réaumur ( $41^{\circ}$  to  $54^{\circ}$  Fahrenheit), and this is used without modifying it for special cases. There is high natural pressure, owing to the height of the sources. Two kinds of douche are used, (a) the rose, or rain-douche, which spreads over the whole body, by falling like a shower from above; and (b) the jet-douche, which is either perpendicular or lateral. There is a special chamber. The medical attendant, on hearing the patient's name, turns on the appropriate tap. It is generally applied between 8 and 10 A.M., and at first only from four or five seconds. After the douche, the patient is rubbed vigorously, and then, if the weather permit, walks out, and climbs the hills; or, in bad weather, takes exercise in a long saloon for the purpose. Hardly any douche exceeds thirty seconds. The first, and sometimes other douches are followed in some cases by dyspnœa, or by violent palpitation. These symptoms sometimes depend on the time being too protracted. If they persist, along with weariness, and general weakness, it is better to leave off the douches. Headache may be sometimes avoided by protecting the head. Stabbing pains, with violent cough and expectoration, are met with in a few cases. Brisk rubbing with a towel dipped in rather cold water ( $50^{\circ}$  to  $59^{\circ}$  F.) may be substituted for the douche with great advantage, particularly in the winter. Rubbing with a dry towel succeeds this. The whole affair must not exceed five minutes. Hectic is considered to contra-indicate both these and the douche. The same remark generally applies to night-sweats.

W. BATHURST WOODMAN.

## SANKEY ON THE CLASSIFICATION OF MENTAL DISEASES.

THE *Journal of Psychological Medicine* in a recent number contains a paper on this subject. After remarking upon the fact that classification has occupied the minds of physicians in every country, and that their efforts proved futile on account of the imperfect state of the knowledge of disease at the time, he says that now we only try to adopt some provisional arrangement which shall aid us in obtaining a wider grasp of facts. Many systems for the classification of mental diseases have been devised of late, and have been received with more or less favour, but in Dr. Sankey's judgment they have all failed in that they have not been founded upon the essential character of the disease itself; the word disease meaning the sum of all the phenomena which are observed in a given case, including the

first indications of deviation from health, the evolution of the symptoms, their progress, order of succession, and mode of termination.

A classification based upon etiology would not be objectionable, if it could be shown that all the phenomena of the disease invariably followed a given course when resulting from a given cause and that cause single. As this cannot be done, the basis is bad and the classification a failure.

In the attempt to group what are called mental diseases a difficulty meets us at the threshold. The group is not founded upon any nosological base. The term includes not a class of diseases, but rather such sorts of medical cases as are usually met with in asylum practice.

In forming his classification Dr. Sankey has aimed at making it simple but yet comprehensive, little being gained when the classes are nearly as numerous as the objects to be classed; the divisions, therefore, are as few as are compatible with completeness. In taking a survey of all cases in asylums, it is believed that they may readily be divided into two grand divisions. It will be found that the disease in some is really idiopathic, in other words, it is distinct from all other known forms of disease; while on the other hand, in the rest of the cases the mental symptoms are only a part of some other well recognised malady, such as epilepsy or other organic disease of the brain, in which there happens to be much disturbance of the mental faculties. In the former cases the mental aberration is an attribute, in the latter an accident in the course of the disease. He makes two grand divisions, viz.: Division A, in which the mental symptoms are primary, or essential, or idiopathic; and B, in which they are secondary or symptomatic.

Division A may be divided into two subdivisions viz.: (a) Pathological, in which the cases depend upon a purely pathological change, or on what is really disease; and (b) in which the mental symptoms are due rather to developmental causes. In the former category Dr. Sankey recognises as yet but two *species morbi*, viz., 1. Ordinary insanity; and 2. General paresis. In the subdivision (b) there are also two kinds of cases; (1) in which the developmental anomaly is an original conformation, or idiocy; and (2) in which it is due to decay, or senile imbecility. The Division B, in which the mental phenomena are only symptomatic, or accidents in the cases, forms, perhaps, a smaller moiety of the inmates of asylums, and the most frequently occurring kind of cases are the following: 1. Epileptic insanity; 2. Alcoholismus; 3. Spinal disease, extending to the cerebral regions; 4. Organic disease of the brain, as the result of apoplexy, &c. The following table shows at a glance the classification adopted:

(A.) Idiopathic	{	1. Morbid	-	{	1. Insanity proper.
		2. Developmental	-	{	2. General Paresis.
	{	-	-	{	3. Idiocy.
				{	4. Senility.
(B.) Symptomatic	{	-	-	{	5. Epileptic Insanity.
				{	6. Alcoholismus.
	{	-	-	{	7. Spinal Diseases.
				{	8. Organic Cases.

Dr. Sankey considers that there are but two forms or species of disease, and that all known varieties of symptoms belong only to these two species. Ordinary insanity he considers specifically distinct from general paralysis, for the following reasons. The symptoms are not only somewhat different, but they undoubtedly follow a different course from com-



mencement to termination. The natural history of the cases points to this difference in their pathology. In every mental act there are two chief agencies in operation—1st, the nerve-tissues; 2nd, the blood-supply. A comparison of the early symptoms tends to show that the one disease commences through the first of these agencies, the second through the other. Dr. Sankey supports this conclusion by drawing a parallel between a case of dyspepsia and a slight case of insanity, each of which depends upon a depressed state of the blood, and each of which may be cured by the same agent, viz., a purgative. In general paralysis, on the contrary, from a very early period the symptoms are such as embrace every artificial division of nerve-force. There is evidence first of a nerve-shock, nerve-excitement, and then nerve-paresis, which affects the sensation, the intellect, the self-controlling processes, the movements, as well as the regulating powers presiding over organic life. Dr. Sankey omits from his table nearly all the innumerable varieties described in the text-books, regarding them as but symptoms which may any or all occur in the course of any case of mental disease. A disease may have well marked stages; but we cannot suppose that each stage is a distinct species of disease. A case of insanity may at different periods of its course present the various symptoms of mania, melancholia, and dementia, and these may follow each other in more or less rapid succession; but it would serve no good purpose to call each stage a separate disease, even when one of the alternations was a longer or shorter lucid period. The terms homicidal mania, suicidal melancholia, nymphomania, kleptomania, &c., do but indicate certain symptoms that may all occur during the course of a single case of insanity, and therefore cannot be held to indicate distinct diseases. In conclusion, Dr. Sankey disclaims the idea that no other species of insanity may yet be eliminated, but at present his experience leads him to believe that only two species have been actually proved.

CHARLES ALDRIDGE, M.D.

#### LEBERT ON GASTRIC ULCERS (PARTICULARLY AS REGARDS THEIR ETIOLOGY.)

PROFESSOR LEBERT, now of Vevay, contributes to Nos. 39, 40, and 41 of the *Berliner Klinische Wochenschrift* for 1876 (September 25, October 2nd, and 9th), three papers on ulcers of the stomach, which deserve careful consideration, not only as coming from the source they do, but on account of their own intrinsic interest and value. Lebert remarks that the simple chronic ulcer of the stomach, *ulcus simplex, perforans, corrosivum, escharoticum ventriculi*, is a disease met with pretty frequently in various parts of the world, particularly in towns. Although it is not very long that this disease has been studied with precision, it would be very erroneous to conclude that it is a new disease. A new disease originates under new conditions. The disease which attacks those who make quinine does not date back further than the discovery of quinine. The conditions are similar in phosphorus necrosis. It is far otherwise with gastric ulcers. Some historical notice may, therefore, not be uninteresting. Although there are doubtless older still, one of the earliest notices which Lebert can find is by John Bauhin in a communication to his elder

brother, Caspar Bauhin (1550 to 1624 A.D., see Boneti *Sepulchretum*, libr. iii, Sect. 11, obs. 25, 1700). It relates the case of a surgeon's daughter, aged 18, dying suddenly with symptoms of perforative peritonitis. She had passed clotted blood by stool, and on inspection, besides gas, fluid, and contents of stomach in the peritoneal cavity, they found a perforation in the middle of the stomach near the fundus. In the middle of the 16th century Marcellus Donatus (*De medicâ historid mirabile*, lib. iv. cap. 3) speaks of an ulcer of the lower part of the stomach near the pylorus in a man aged 59, with a history of persistent vomiting and gastric pain, using the characteristic expression, "*unicam anteriorem exesam*." Courtial (*Journal des Savants*, 1688) describes an oval or roundish opening in the anterior part of the stomach with callous edges, in a young woman who had suffered almost from infancy from her stomach. Littré (*Mémoires de l'Académie des Sciences*, 1704, p. 96) found a roundish ulcer near the pylorus in a man who had suffered from various gastric symptoms, and finally from hæmatemesis. One of the earliest recorded cases of a gastric ulcer leading to a fistula is given by Duverney (*Mémoires de l'Académie des Sciences*, 1704, p. 27). In the first half of the last century we have similar observations by Van Swieten, Klein, Wenker, Godac, Atkinson, Petit, Ettmüller, Circaud, Helm, Kade, &c. Some of these are of doubtful nature, but those of Van Swieten (*Comment. in Boerhaviâ Aphor.*, t. iii, p. 152) and Wenker (*Diss. de virgine ventriculû per xliii annos perforatû habente: Argentor. 1735*) seem indubitable. Forestus and Schenk von Grafenberg record cases of cure. There are still other observations by Reil, Blase, Mangold, Heister, Sandifort, Soemmering, Morgagni, and others, of deformity of the stomach from median contraction, with cicatrices of ulcers; and Mead, Murray, Santesson, Westring, &c., record cases of adhesion of the stomach to contiguous parts, of rupture of that organ from ulcer, and death from hæmatemesis due to ulceration. Baillie (*Morbid Anatomy of the Human Body*, &c., London, 1798, fasc. iii, tab. iii, fig. D) gives good figures. Voigtel's description is so good that it deserves quotation. He says (*Handbuch der Pathologisch. Anatomie*, t. ii, p. 470, Halle, 1804): "We often find ulcers in the coats of the stomach. They most frequently begin from within and work their way outwards. They may simply erode, or completely perforate. They generally have a peculiar appearance of their own, and are often surrounded with inflammatory induration; but the vicinity of the ulcer very often shows no morbid changes at all. They look as if some one had cut a bit out of the stomach with a knife some time before and this had healed, so that they exhibit an excavation with a smooth rounded edge. Sometimes the coats of the stomach are somewhat thickened near the perforation." Since then, Meckel, Reil, and a host of other authors have described these ulcers. Hunter's theory of these ulcers as due to the gastric juice (self-digestion), although supported by Spallanzani, Carswell, and others, has never met with any general acceptance. In 1808 Joseph Morin (*De la perforation de l'estomac*. Thèses de Paris, 1800. No. 108) explains the perforation as the outcome of tedious and local destruction of the coats of the stomach, and speaks of stasis in the blood-vessels, with altered circulation and perverted nutrition as its consequences. According to Lefèvre (*Archives Générales de*

*Médecine*, III sér., t. xiv, p. 377), Leroux and Chausser communicated on the same day cases of perforating ulcer of the stomach with splenic adhesion, to the Medical Society of Paris in 1808. In 1818 Chausser (*Dictionnaire des Sciences Médicales*, tome xl, p. 338) was led by a prosecution for a supposed attempt to murder by poison to point out that perforation occurs not unfrequently as a sequel of long-continued ulceration. Cruveilhier also states that, in the first case of chronic ulcer of the stomach leading to perforation with which he had to do, an accusation of poisoning would have been made but for his evidence. As regards this medico-legal view of the question, it is very well handled in Lainé's *Considérations médico-légales sur les érosions et perforations de l'estomac* (Thèse de Paris, 1819). From this epoch the expression "*Perforations par érosion*" became commonly used. Lainé recommends a careful inquiry into the history and antecedents of the case, and, in doubtful cases, not only the ordinary chemical analysis, but also careful examination of the mouth, gullet, &c. Rausch, in 1823, gives true ulcers, frequently having callous edges, as a principal cause of ruptures of the stomach. Ebermaier cites Henkel, Mole, Baron, Gérard, Desgranges, Trinius, Becker, Spilla, and Thomessen as all giving cases of this kind. He shows that the pyloric end is usually the one to rupture. Abercrombie describes simple perforating ulcer of the stomach, but some of his cases appear to have been carcinomatous. We thus have scattered observations down to the end of the last and the beginning of the present century. The disease now began to be studied, and cases collected, but they were too exclusively cases of perforation, and the clinical aspects of the disease were rather neglected. The combined study of the clinical and pathological aspects of this disease is chiefly due to Cruveilhier. The 10th volume of his *Pathological Anatomy* contains a large personal experience of chronic ulcers, including the cases of the Hellenist Gall (1828-9); the sudden death of a charcoal-burner from this cause in December 1829; the celebrated chemist Darcet (1830), the case of the Countess von Ebenfels, cured of a gastric ulcer in 1830, although she subsequently died from perforation of the stomach in 1834 (see vol. 20 of his work). The origin, course, and sequelæ of these ulcers is very well given, and a good foundation for the clinical treatment. Omitting the English authors and serial publications on this subject quoted by Professor Lebert, the following references seem worthy of transfer to our pages: Duval (*De l'ulcère chronique de l'estomac*, Dissertation, Paris, 1852); Bisegger's *Ulcus chronicum ventriculi* (Diss., Zürich, 1856); Steiner and Wollmann's *Dissertations*, in 1868 (following Virchow's lead); Cruveilhier's paper in the *Archives Générales de Médecine*, 1856; Trousseau's *Clinical Lectures*, vol. iii, p. 82; vol. iv, pp. 64 to 93 of the English edition, New Sydenham Society; and Von Ziemssen in Volkmann's *Klinische Vorträge*, Leipsic, 1871.

Schiff in 1845 (*De vi motoria baseos encephali Inquis.*, cap., 1845, p. 41) showed that, after irritation of certain parts of the brain, there occur localised hæmorrhagic infiltrations of the mucous membrane of the stomach. In 1867 he recurred to this subject in his *Leçons sur la physiologie de la digestion* (tom. ii, chap. 35, 1867). Lebert himself, Virchow, and others, have for nearly five-and-twenty years taught the hæmorrhagic and necrotic origin of these ulcers. Müller, in 1859, showed that ligature of the portal vein

caused numerous hæmorrhagic erosions in the stomach, particularly at the pyloric end (*Das corrosive Geschwür im Magen und Darmkanal*, Erlangen, 1859); and Pavy showed that ligature of the gastric arteries caused larger ulcers to arise. We owe the best account of all this to Ebstein (*Archiv für experimentelle Pathologie und Pharmakologie*, 1873). These accumulated experiences, clinical records, and anatomico-pathological observations Lebert uses for purposes of comparison, basing his remarks chiefly on experience of 252 hospital and 104 private practice cases.

We shall next endeavour to give a sketch of the views of this veteran pathologist on this subject.

Professor Lebert's clinical statistics are as follows. He has collected 104 cases from private practice, in 33 of which there were *post mortem* examinations. He has records of the 71 cases which were not fatal. His hospital cases amount to 252, and are as follows:—

	Males.	Females.	Total.	Proportions.
1. Zürich Hospital.—	22	+ 24	= 46	{ Nearly alike for both sexes. As 23.8 to 76.2, or about 1 male to 3 females.
2. Breslau Hospital.—	15	+ 48	= 63	
3. Breslau Polyclinic (Dispensary).—	32	+ 111	= 143	{ 23.3 to 76.7, or 23 : 77, or rather more than 3-4ths females.
	69	+ 183	= 252.	

Besides these, he has analysed 65 other cases, in which there were necropsies, 38 males and 27 females. These do not include those tabulated by Rokitsansky, Jaksch, Dittrich, Virchow, and Brinton. As regards the pathology, he says that there is now a pretty general agreement that in a simple chronic ulcer of the stomach we have not usually to deal with the products of destructive inflammation, or an ulcerative gastritis. It is true that we may, though rarely, meet with superficial, and sometimes multiple ulcers, for the most part surrounded with a slaty gray coloration of the mucous membrane, with more or less connection with chronic gastric catarrh. But the common classical 'deep ulcer of the stomach mainly owes its origin to a localised interference with the circulation of the blood, to a hæmorrhagic infiltration with necrotic sloughing and incrustation. For this reason *ulcus escharoticum* is not a bad name for it. Morin's theory, partly conceded by Rokitsansky, was mentioned in the first part of this paper. Lebert was chiefly convinced by an observation of Duval's (Dissert., 1852). A dog which had diseased cardiac valves, with fibrinous deposits on them, was dissected; and, on the greater and lesser curvatures, the stomach exhibited a number of small ulcers, the size of a sixpence. Its mucous membrane was pale, not softened, but rather thickened round the ulcers in the greater curvature. The ulcers were deep, with sharply punched-out edges, and the muscular tissue of their floor was much thinned, so as to be almost transparent. At several spots between the ulcers there were several extensive red-brown patches without any erosion, which were found to be circumscribed hæmorrhagic infiltrations or extravasations. Next, the discovery of similar ulcers in a rabbit and a dog into whose jugular veins he had injected pus, deepened his convictions. The ulcers were found in the stomach and in the colon, seven to nine days after the injection. Schiff showed that, after irritation or section of the optic thalami, and



the peduncles of the cerebrum, softening and partial hæmorrhagic infiltration of the stomach occur in about four days. Section of one half the pons, and of the upper part of the medulla oblongata, led to circumscribed exudations of blood in the stomach (*Archiv für Phys. Heilk.*, Band xiii, p. 30, 1854). Virchow in his *Archiv* (Band v, p. 362) gave a generally acceptable view of the hæmorrhagic-necrotic origin of gastric ulcers. He says that, when the gastric circulation is obstructed or meets with any obstacle in any part of the stomach, there is no longer the counterpoise of the alkalinity of the blood against the acids of the stomach, and so the hæmorrhagic patch falls a prey to the action of the gastric juice. Congestion of the portal vein predisposes by causing the gastric veins to be dilated, and setting up local hyperæmia. Gastric catarrh, with violent vomiting and spasmodic contractions, may cause similar local blocks. Diseases of the coats of the blood-vessels, disorders of nutrition, obliterated arteries, and the like, lead to the same results. The superficial situation of the coronary arteries, arteriæ gastricæ breves, and gastro-epiploicæ, explains the frequency of these ulcers in their neighbourhood. The experiments of Ebstein and Gottstein, the former on Heidenhain's plan of injecting chromic acid through holes in the skull, the latter by irritation of sensory nerves, and injury to the labyrinth of the ear in guinea-pigs, caused similar hæmorrhages in the stomach. Not only lesions of the medulla oblongata, but injuries of the spinal cord, and suspended respiration in curarised animals, led to similar results, as did severe dyspnoea brought about in other ways. Lebert found only 2 gastric ulcers in 105 fatal cases of ordinary pneumonia, but there were ecchymosed patches, some with superficial erosions, in 15 cases; whilst in 500 necropsies on chronic pneumonia and tuberculosis he found gastric ulcers 7 times, cicatrices of them 6 times, and ecchymoses in the stomach in 1-5th of the acute and 1-22nd of the chronic cases. Lebert quotes other cases and experiments, and thoroughly agrees with Virchow as to a variety of causes leading to the local arrest of circulation, hæmorrhages, and ulceration. There can be no doubt that chlorotic girls and women are most subject to these ulcers; and the age from 15 to 25, or soon after puberty, is most obnoxious to them.

As regards the relative frequency of those ulcers, Lebert thinks he is not far wrong in stating that the simple chronic ulcer of the stomach is found in about 4 per cent. of the bodies opened after death in Europe. Brinton says 5 per cent., almost equally divided between ulcers and cicatrices of the same. The Prague statistics are too high, because hæmorrhagic erosions are included. Deducting these, we get 5.8 per cent. in the 2,330 bodies opened by Bochdalek. In the same way Dittrich's 12.3 per cent. may be reduced to 8.2 per cent. Berlin gives us 4 per cent. (Steiner and Wollmann after Virchow); Starke gives 10 per cent. for Jena; Dahlerup 13 per cent. for Copenhagen. In Breslau, Lebert's figures are from 2 to 2½ or 3 per cent. From Zürich and Breslau together we get the following.

From 1853 to 1859 inclusive in Zurich:—

3,856 males, with ulcer of stomach	22 or 0.57 per cent.
3,048 females	24 or 0.76 "
6,904 clinical cases	46 or 0.67 "

The mortality was only 4 in 46 (3 men and 1 woman). In the Breslau clinic, 1860 to 1873 inclusive:—

4,082 males, with 15 ulcers of stomach,	or 0.37 per cent.
4,220 women "	48 " 1.14 "
8,302 patients	63 " 0.76 "

Here the females are 3 to 1 of the males; 15 of these 63 cases died, 7 men and 8 women. In the Breslau Polyklinik (Dispensary), from 1860 to 1872 inclusive, the figures are as follows:—

13,082 male cases with 32 ulcers of stomach	per cent. = 0.24
13,300 female "	111 " = 0.82
26,382 cases in all with 143 "	" = 0.54

Professor Waldeyer states that in Breslau, from 1866 to 1872, amongst 1,170 necropsies there were 19 cases of gastric ulcer, 6 of them cicatrised—or 1.62 per cent. as an average—individual years fluctuating a good deal. Deducting the wounded of the years 1866, 1870, and 1871 (war times) we get 14 cases of gastric ulcer in 706 sections, or nearly 2 per cent. As regards the two sexes, taking the Breslau statistics altogether we get 3 males to 10 females, but in the *fatal* cases the proportions are different, viz.:—

Lebert's own cases	19 males 14 females.
Other cases	38 " 27 "

Or a total of ..... 57 " 41 "

This difference may possibly be accidental. As regards *age*, Lebert justly remarks that he suspects large numbers of statistics derived from a variety of sources, as reminding one of the kind of pseudo-statistics implied in the sum, 5 sheep, 6 oxen, and 3 asses, make 14. But in the cases of which he has accurate returns, the 252 from Zurich and Breslau, he gets the following results:—

Age.	Zurich.	Breslau.
11 to 20	6.5 per cent.	10.7 per cent.
21 " 30	39.1 "	33.6 "
31 " 40	21.8 "	35.9 "
41 " 50	13.0 "	13.5 "
51 " 60	15.2 "	4.8 "
61 " 70	4.4 "	1.5 "

In M. Lebert's own (33) cases, the mortality from 20 to 30 was 13 per cent.; from 31 to 40, 22.6 per cent.; from 41 to 50, 29 per cent.; from 51 to 60, 25.8 per cent.

In the collected (foreign) material of 65 necropsies in fatal cases, the mortality of gastric ulcer from 15 to 20 was 8.2 per cent.; from 21 to 30, 23.8 per cent.; and from 31 to 40, 10.3 per cent.; whilst 41 to 50 gave 18.7 per cent.; and the two next decades 17.1 and 11.9 per cent., after which they declined. Localities and other causes greatly modify these facts. Putting 198 cases of *post mortem* investigation of gastric ulcers together (which includes those given by Dr. Wilson Fox) from Willigk and Miguel, we get these figures:—

Age in years.	No. of Deaths.	Per centage.
15 to 20	20	10
20 " 30	48	24
30 " 40	28	14
40 " 50	43	22
50 " 60	29	15
60 " 70	19	10
70 " 80	11	5
	198	100

We thus get one-fourth before 20 and after 60 years of age, and three-fourths from 20 to 60; or

38 per cent. from 20 to 40, and 37 per cent. from 40 to 60. It is thus excessively rare in children, though Lebert has seen one or two cases. As to *occupation*, it is most common in maid-servants, cooks, poor women, particularly widows, in intemperate and starved people; in men, among body-servants and other dependents. These ulcers may originate in accidents to the epigastric region.

The remainder of the paper is occupied by a consideration of the allied affection of duodenal ulcers. Lebert thinks it very likely that those arising from burns (as remarked by Cumin, Dupuytren, Cooper, Long, Curling, and Erichsen) may lead to perforation. He quotes Holmes's *System of Surgery*, to the effect that 16 ulcers of the duodenum and 2 of other portions of the intestines were found in 125 severe cases of burns (vol. i, p. 733). The general conclusions of Lebert show greater frequency in the female sex, greater mortality in the male, and more cases in advanced life than is commonly supposed.

W. BATHURST WOODMAN.

## ANATOMY AND PHYSIOLOGY.

**SOLTMANN ON THE INHIBITORY NERVOUS SYSTEM IN THE NEWBORN.**—The *Fahrbuch für Kinderheilkunde* (Band. xi, 1 Heft.) contains a very valuable paper, in which is demonstrated the almost purely automatic character of the movements in the newly born. To determine this experimentally the author passed an electric (constant or induced) current through needles introduced into the cortex of the brain of newly born dogs. Reflex movements were produced with the same ease before and during the passage of the current. He thence concluded that the centre for controlling reflex acts must be undeveloped at that age. For Simonoff, experimenting in 1866 upon full-grown dogs, found a most marked depression of reflex excitability during the passage of the current, and the author obtained the same result in dogs aged from 14 to 21 weeks.

To determine whether a reflex inhibitory centre exists in the spinal cord of the new-born, the author applied Lewiss's experiment to them. Lewiss found that, in a cord divided below the medulla, reflex movement would be arrested by ligaturing the anterior columns, or by squeezing them with the forceps. In Soltmann's experiments upon the new-born these procedures appeared to increase rather than diminish the intensity of the reflex acts. An electric current was next passed through the vagus, and it was found that one of much greater intensity was required to arrest the movements of the heart in the new-born than in the adult (8.0 to 10.0 of Du Bois-Reymond's magneto-electrometer instead of 22.0 to 24.0, as in the adult animal).

The author concludes that these experiments explain, amongst other things, the following phenomena in newly born children; 1. Their liability to convulsions; 2, the frequent absence of the slow pulse in the second stage of basilar meningitis; 3, the ease with which slight causes (fever, etc.) accelerate the heart-beats in them.

RALPH W. LEFTWICH, M.D.

**BÜTSCHLI ON THE DEVELOPMENT OF THE OVUM.**—A review of the work done in this field by Bütschli appears in the *Monthly Microscopical*

*Journal* for August. His researches were chiefly conducted upon the ova of nematoid worms and the rotifera. He describes a spindle-shaped body in the ova of *nephelis vulgaris*, which he assumes to be the *germinal vesicle*, and from which is developed the "Richtungsbläschen", or "globules polaires", which are now thought to enter into the genital organs of the future being. It is shown by the reviewers that the intermediate steps have not been defined by Bütschli, and that the "Richtungsbläschen" may result independently of impregnation, and its expulsion may be one of the earliest developmental phenomena of the unfertilised egg. Bütschli advances the theory that conjugation amongst the infusoria is really a rejuvenescence in which the creatures undergoing it become "the stem ancestors of a series of generations", which propagate by fission, and enumerates numerous external changes which appear to result directly from conjugation. Some of these statements the reviewers question, whilst they consider that Bütschli has by no means established his theory of the important rôle played by rejuvenescence. Whilst anxious to give the theory the attention it merits, they consider that the intermediate changes of form have not been followed out with sufficient accuracy and precision, and that most of the work accomplished in this field, although embracing at present a collection of valuable facts, teems at present with results both "crude and conflicting, and essentially wanting in coincidence and correlation". The names of Dallinger and Drysdale attached to this review are a sufficient guarantee of its impartial character.

**ROLLET ON THE ENDING OF NERVES IN TENDON.**—An abstract in the *Monthly Microscopical Journal* of a paper by Herr Rollet in the *Wiener Acad. Sitzungsbericht* (vol. lxxiii) shows that a plexus of medullated nerve-fibres exists and ends in the tendon of the sterno-radial muscle in frogs. These nerves divide dichotomously and end in structures much resembling the end-plates of muscles. They are regarded as motor, as no reflex discharge could be obtained from them.

**TOMES ON THE STRUCTURE AND DEVELOPMENT OF VASCULAR DENTINE.**—A valuable paper by Mr. C. S. Tomes has been communicated to the Royal Society and abstracted in the *Monthly Microscopical Journal* for July. The author defines vaso-dentine as a modified dentine permeated by a system of canals of greater diameter than ordinary dentinal tubes, anastomosing freely, and containing capillary vessels, but no pulp. It is developed from a layer of odontoblast cells, and in the more typical form contains no true dentinal tubes. It consists, in fact, of the capillaries of the pulp surrounded by a calcified matrix. Osteo-dentine, on the other hand, does not contain capillaries, but consists of a system of large channels from which small tubes radiate. It is developed not from a separate layer of odontoblastic cells, but from the coalescence of calcifying trabeculae, which shoot through the substance of the formative pulp, the interspaces corresponding to the canal system. The transition from the vaso-dentine of the Gadidae to the hard, non-vascular dentine of Mammals is shown to be gradual. The author would distinguish from the above forms a modified dentine which he terms plici-dentine, and regards the laminated arrangement of matrix and the lacunae of osteo-dentine as not so distinctive as was once supposed.



**RENANT ON THE CELLS OF TENDON.**—M. Renant finds (*Monthly Microscopical Journal*), by the use of eosine, that the network of stellate cells underlying the epithelioid layer of tendons is formed by protoplasmic expansions of the superficial tendon-cells, and not by cells of ordinary connective tissue.

**DELSAULX ON THE ORIGIN OF THE BROWNIAN MOVEMENTS.**—A paper on this subject has been read lately before the Royal Microscopical Society by the Rev. J. Delsaulx, in which a theory of causation propounded by a friend of his has been fully developed and extended. The oscillations are regarded as the necessary result of the molecular vibrations which constitute heat, because each molecule, in vibrating, tends to displace the centre of gravity of the body to which it belongs. After considering the various conditions under which the phenomena of Brownian movements may be developed, the author proceeds to examine theoretically the grounds for attributing them to molecular heat motions, and states that he was led to consider them from this point of view from his studies of the movements of Mr. Crookes's radiometer. His arguments in favour of the theory of their thermo-dynamic origin are forcibly and clearly expressed. BEVAN LEWIS.

**MÜLLER ON SPONTANEOUS GENERATION.**—Dr. Bastian's experiments on urine neutralised with liquor potassæ exposed to a temperature of 122 Fahr. have been repeated by D. Müller (*Centralblatt für die Medic. Wiss.*, May 5, 1877). The results were invariably negative, no living organisms making their appearance in the hermetically sealed retorts. Müller sums up his conclusions thus.

"My experiments, carried out with all the precautions suggested by Dr. Bastian, have convinced me that in the germless fluids employed no signs of spontaneous generation are ever to be met with; further, that a temperature of 50° Cent. (122 Fahr.) is not specially suited to promote the development of bacteria, even when their germs are already present in the liquid."

**SCHÄFER AND WILLIAMS ON THE STRUCTURE OF THE MUCOUS MEMBRANE OF THE STOMACH IN THE KANGAROO.**—Messrs. E. A. Schäfer and D. J. Williams describe (*Proceedings of the Zoological Society of London*, June 18th, 1876) the results of some observations based on the examination of the stomach in two distinct genera, the *Macropus giganteus* and *Dorcopsis luctuosa*. In both these animals three regions of the mucous membrane can be recognised with the naked eye.

1. The *cardiac region* occupies in *Dorcopsis* more than a third of the inner surface of the organ, lining the whole cardiac fundus and terminating by a well-marked oblique line running from the lesser curvature in a direction downwards and to the left. In *Macropus* this region is less extensive, and is widest in the neighbourhood of the gullet. Microscopically it is covered with a layer of dense stratified epithelium continuous with that of the gullet, and resembling it in all respects. A few papillæ of the mucous membrane project into it, but no glands could be detected in it.

2. The *second region* in both animals occupies all the remainder of the mucous membrane, with the exception of a circular patch about  $2\frac{1}{2}$  or 3 inches in diameter, situate at the pyloric fundus. The mucous

membrane is soft and thick, and contains densely arranged tubular glands. At the fundus of each gland the authors find large rounded or polyhedral cells, whose cell-substance is clear, and their nuclei, instead of being distinctly vesicular, as they are in the cells lining the upper part of the gland-tube, appear as intensely stained shrunken or compressed bodies, usually situate excentrically in the cell. These cells, the authors think, strongly resemble those lining the alveoli of the submaxillary gland. In addition to these tubes, and, of course, interglandular intervals (consisting of connective tissue, blood-vessels, lymphatics, lymphoid cells, &c.), the authors describe as *lymphoid patches* localised elevations of the mucous membrane, in which both mucous and submucous layers are largely formed by lymphoid tissue. This tissue, being gathered at intervals into well-marked nodules or follicles, produces small rounded eminences, each with a little pit at its summit. At the bottom of this pit the tubular glands fail, and instead only a layer of columnar epithelium is found, containing between its cells numerous lymph-corpuscles. Free lymph-corpuscles were also seen in the pit, as if they had emigrated from the subjacent lymphoid nodule. The muscularis mucosæ is wanting opposite the summit of each follicle. At the junction of the first and second regions of the lowermost layers of the epithelium the former become directly continued into the columnar epithelium of the latter. The other layers cease abruptly.

3. The *third region* consists of the circular patch at the pyloric fundus above-mentioned, and also of a small band running round the stomach at that part. The gland-tubes in this portion are very long. They present, in addition to columnar and cubical cells, *peptic cells* of spheroidal or ovoidal shape and granular aspect. The latter are absent near the mouths of the glands, and frequently do not reach to the fundus.

The authors consider that the main parts of the glands in the second and third regions are almost precisely similar, and probably have a similar function, the superaddition of the peptic cells in the third region probably implying the superaddition of some other function in these glands.

**QUINCKE ON THE INFLUENCE OF SLEEP ON THE ACTIVITY OF THE KIDNEYS.**—It has been ascertained by Professor Quinke (*Archiv für experimentelle Pathol. und Pharmacol.*), that whereas the urine secreted during sleep is scanty and of high specific gravity, that secreted during the first three hours after waking is more abundant and of lower density than during any similar period of the twenty-four hours. A number of observations were made to establish this point, the subject remaining in bed, and taking neither food nor drink for the three hours in question. The fact admits of being interpreted in various ways. We may suppose the absorption of fluid from the intestinal canal to be arrested during sleep and resumed on waking. This hypothesis is a most unlikely one, for the periodic variation takes place as usual when no liquid has been taken within four hours of retiring for the night. It is probable that the physiological activity of the kidneys may be checked during sleep, owing partly to diminished energy of the secretory nerves, partly to contraction of the renal blood-vessels, partly to a lowering of tension throughout the arterial system. This is the most probable explanation, but it is still in need of proof.

SANKEY ON A NEW PROCESS FOR EXAMINING THE STRUCTURE OF THE BRAIN, AND ON SOME POINTS IN THE HISTOLOGY OF THE CEREBELLUM.—The following is an outline of a process recommended by Mr. Octavius Sankey (*Collected Papers of the Physiological Laboratory of University College, 1876*).

1. Fresh brain is cut into slices as thin as possible by means of an amputating knife moistened with spirit, the sections being placed in water.

2. The water is then poured off till only just sufficient to cover the sections remains. To this an equal quantity of a 1 per cent. solution of aniline blue-black is added. The sections are left in this mixture (*i.e.*, a  $\frac{1}{2}$  per cent. solution of the dye) for 12 hours. The dye is then replaced by water, and the sections washed and floated on to glass slides.

3. The stained sections are dried on the glass by means of a current of air, usually without artificial heat.

4. The sections are next pared down to the required thickness either with a razor, or, more satisfactorily, with a carpenter's plane modified by the author.

5. Lastly the preparation is cleared by dammar or balsam, the intervention of oil of cloves not being required.

Of all brains, the author finds that of the human adult most suitable for this method. Aniline blue-black causes the nuclei to appear black; the cells and their processes are rendered dark purple, whilst the rest of the section assumes a faint purplish-blue colour. By this method the author has been enabled to trace fibres for great distances. He gives some results of his observations on the cerebellum. Tracing the peripheral process of a Purkinje's cell, he finds it dividing and subdividing, usually, but not always, dichotomously, and at each point of division there is a triangular enlargement, compared by the author to a small blot produced by drawing a line of ink across another that is still wet. The fine fibres on approaching the cells in the pure grey layer in which they terminate are seen to enlarge and assume the character of the protoplasm of the cell into which they pass without line of demarcation. These small cells also give off other fibres, three or four in number, which divide and subdivide until they are lost in the reticulo-molecular ground-substance of the part. Other nuclei in the pure grey layer which are not surrounded by protoplasm, and are regarded by Meynert and Obersteiner as free nuclei belonging to the neuroglia, the author believes to belong to the capillaries, which latter are almost invisible in his preparations.

SCHÄFER ON AN EARLY MAMMALIAN OVUM.—Mr. Schäfer (*Proceedings of the Royal Society*, No. 168, 1876) gives a description of an early developing ovum of the cat. The ovum presented the appearance of a vesicular body, of oval shape, with a long diameter of 1-7th inch, and short one of 1-15th inch. Sections showed it to consist of two separate vesicles, one within the other, enclosed in the zona pellucida, or primitive chorion. These vesicles the author terms respectively the hypoblastic and epiblastic vesicles. The latter lines the zona throughout, but the former, being considerably smaller than the epiblastic vesicle, only comes into proximity with it at one point. The wall of such vesicle consists of a simple layer of flattened cells, placed edge to edge, except where the two walls come into close proximity, at which point (extending over an area of about

1-60th inch in diameter) the cells are two or three deep. The epiblast and hypoblast are, however, here quite distinct and separated by (in addition to some granular material) an exquisitely fine pellicle, which in sections appears as a mere line passing over and forming a definite boundary to the upper (outer) surface of the hypoblast at the thickened area." For this the author proposes the term, "*membrana limitans hypoblastica*." It is perfectly homogeneous, stained slightly by carmine, not at all by logwood, and is probably a cuticular formation, produced by the hypoblastic cells. In sections, it appeared to be limited to the thickened area.

E. CRESSWELL BABER, M.B.

MERKEL ON THE STRUCTURE OF THE RETINA OF MAN.—Professor Merkel has a very interesting communication on this subject in the June number of Zehender's *Monatsblätter*. He recognises nine layers: the optic nerve layer, the ganglion cell layer, the inner granular layer, the inner nuclear layer, and the outer granular layer, which he classes as cerebral; and the outer nuclear layer, *membrana limitans externa*, layer of rods and cones, and the pigment-layer, which he designates as epithelial.

He states that the nerve-cells of the ganglion-layer are disposed in a single series, except in the yellow spot and its immediate neighbourhood, and that they are crowded together at the fundus and widely separated at the periphery. He confesses to having seen the actual connection of the branch of a nerve-cell and the inner nucleus of a cone in but a single instance; a connection totally denied by Hannover, but one which has been observed by H. Müller, Ritter, Gerlach, Hulke, Manz, and Gunn.

Professor Merkel describes the substance of which the granular layers consist as a material which can neither be considered as belonging to the nervous or to the supporting structures of the retina, but as intermediate or between the two. It consists of a homogeneous mass containing minute vacuoles in which are solid nucleoli.

The author considers that the *membrana limitans interna*, as distinct from the *membrana hyaloidea*, consists of the ends of the connective bundles which form the frame-work of the retina; these are flattened out and united together so as to resemble a single layer of pavement-epithelium. The flattened ends of these fibres form a layer of conical elements on the inner surface of the retina, which give off radiating anastomosing fibres in the nerve-fibre layer. Long fine fibres and thin plates are given off from the apices of these cones, which support the ganglion cells; the apices themselves are prolonged as delicate bundles through the inner granular layer—they give off radiating fibres in the inner granule or nuclear layer, and contain a nucleus. They are also prolonged into the outer nuclear layer, where they form a sponge-like network, give membranous expansions which cover the nuclei of the rods and cones, and become continuous with the perforated *limitans externa* and the basket-like processes of the rods and cones. BENJ. THOMPSON LOWNE.

RICHET ON THE ACIDITY OF THE HUMAN GASTRIC JUICE IN A CASE OF GASTRIC FISTULA.—M. Richet (*Journal de Pharmacie et de Chimie*, May) has made researches in a case of gastric fistula. The person experimented on had had gastrotomy performed the previous year by Professor Verneuil on account of complete closure of the œsophagus. The impermeability of the œsophagus



gus is so much the more interesting, as it prevented any admixture of the gastric juice with saliva. This was proved by making the patient chew sugar mixed with ferrocyanide of potassium, and finding no trace of this salt in the contents of the stomach. The juice itself was collected after the stomach had been washed out with distilled water, its secretion being excited by the presence of sapid substances in the mouth. Thus obtained it is a colourless liquid, slightly ropy, easily filtered, having little odour, and putrefying spontaneously. The average duration of the sojourn of food in the stomach was 3 to 4 hours for such aliments as starch, fat, and meat; for milk,  $1\frac{1}{2}$  hours; for water and alcohol, 30 to 40 minutes. At the end of 4 hours the stomach was generally empty, and hunger did not supervene till 2 hours later. M. Richet thinks that the food does not leave the stomach gradually; it seems, on the contrary, to pass the pylorus *en bloc*, and all at once. During the first 3 hours of digestion the volume of the mass does not vary; then abruptly, in a quarter of an hour or more, the mass disappears entirely, only the *débris* remaining behind.

M. Richet arrives at the following conclusions. 1. The mean acidity of the gastric juice, pure, or mixed with the food, is equivalent to 1.7 hydrochloric acid for 1,000 grammes of liquid (.17 per cent. of hydrochloric acid). It is never lower than .05 nor higher than .32 per cent. 2. The quantity of liquid found in the stomach has no influence on its acidity; whether the stomach is full or almost empty, its acidity is almost invariable. 3. Wine and alcohol increase, cane-sugar diminishes, the acidity. 4. If we inject into the stomach acid or alkaline liquids, the gastric fluids tend very rapidly to recover their normal acidity, so that at the end of an hour the acidity will return to the mean. 5. The juice is more acid during digestion than when this process has ceased. 6. The acidity increases a little toward the end of digestion. 7. The sensations of hunger or thirst do not depend on the state of acidity or on the emptiness of the stomach.

T. CRANSTOUN CHARLES, M.D.

#### RECENT PAPERS.

The Physiology of the Cortex Cerebri. By Dr. H. Munk. (*Berliner Klinische Wochenschrift*, August 27.)

Anatomical and Microscopical Investigation of the Organ of Touch. By Siro Ciniselli. (*Annali Universali di Med. e Chir.*, August.)

On the Means of Hardening and Colouring the Tissues of the Nervous Centres. By M. A. Erlitsky. (*Le Progrès Médical*, September 29.)

#### PATHOLOGY.

DOWDESWELL ON THE BEHAVIOUR OF THE FIXED ELEMENTS OF CONNECTIVE TISSUE IN INFLAMMATION.—Mr. G. F. Dowdeswell describes (*Proceedings of the Royal Society*, No. 175, 1876) the results of some experiments on this subject made on the tongue of the toad. The method employed differed from that of Cohnheim in the following particulars. 1. The toad was employed instead of the frog, its tongue being, according to the author, much better adapted for the study of the tissues than that of the frog. As much as .004 grain of curare was used, and the injection repeated every 36 or 48 hours during the course of each observation. 2. The body of the animal was supported on cork instead of the glass used by Cohnheim, and the small oblong plate of glass used by him to extend the tongue on, was dispensed with. 3. The tongue was prepared for ob-

servation by distending the lymph sac with a  $\frac{3}{4}$  per cent. solution of common salt, and dividing the mucous membrane forming its roof with a pair of scissors. The cut edges having been drawn aside, the surface of the septum of muscular fibres dividing the lymph sac into two parts was exposed, and in it the most delicate details of structure could be satisfactorily studied.

The result of all the author's observations is that, so long as the circulation continued no change whatever took place in the connective tissue corpuscles, either as regards form or appearance, notwithstanding that the tissue of which they formed a part was beset with innumerable emigrant colourless corpuscles, *i. e.*, was infiltrated with pus.

The author made more than a dozen series of observations, each being continued for several days. In each case a group of connective tissue corpuscles was watched from time to time, and sketched by means of the camera.

E. CRESSWELL BABER, M.B.

COHNHEIM AND MAAS ON THE METASTASIS OF TUMOURS.—Professors Cohnheim and Maas, of Breslau (*Virchow's Archiv*, June 1877), have endeavoured to elucidate the difficult question of the metastasis of new formations. Assuming the possibility that detached fragments of such new growths may find their way into the blood- or lymph-vessels and cause capillary embolisms in some distant part, as has been often suggested, they tested experimentally the truth of the hypothesis so far as to ascertain whether an embolon composed of specific histological elements can grow within the walls of the blood-vessels, and reproduce a growth retaining the peculiar characters of the parent mass. They experimented on rabbits, dogs, and hens, but were most successful with the latter. Their experiments consisted in detaching a small piece of periosteum from the tibia and introducing it into the jugular vein. At first they found considerable difficulty from the ordinary mechanical and surgical results of such an operation, but by using Esmarch's method, combined with all antiseptic precautions, they succeeded, and the animals lived quite well. They were killed after various periods, by bleeding. In those killed from the third to the fifth day, only embolised periosteum was found; in those from the tenth to the sixteenth day, a resistant hard place on the lung, parenchyma existed; in those after the twentieth day, the results were quite negative. Microscopically examined, the masses found between the tenth and sixteenth days were truly growths of the periosteum, with commencing formation of bone; but in cases where more time had elapsed, the new growth was seen to be undergoing absorption, and after a month had entirely disappeared. They consider this disappearance to be due to that physiological capacity of the organism which shows itself in the removal of callus, and they suggest that the real factor in the generalising of new formations is the abolition of this function. So long as the constitutional condition of the individual maintains this ability, tumours remain merely local affections, although fragments are being constantly detached and carried about by the circulation to distant parts of the body. According to this view, the inoculation of healthy animals with cancerous matter would remain without effect, as we know to be the case. The explanation is hypothetical, but it is at least as comprehensible as the "malignity" of certain growths.

ROBERT SAUNDBY, M.D.

## RECENT PAPERS.

- Congenital Renal Tumour. By Dr. Landsberger. (*Berliner Klin. Wochenschrift*, August 20.)  
 Intestinal Obstruction produced by a Wandering Spleen. By Dr. V. Babesi. (*Allgemeine Wiener Medizin. Zeitung*, September 18.)  
 The Differential Diagnosis between Syphilitic and Non-Syphilitic New Growths. By Dr. Vajda. (*Ibid.*)  
 Note on the Existence of Lesions of the Anterior Roots of the Spinal Nerves in Diphtheritic Paralysis. By M. J. Déjérine. (*Gazette Médicale de Paris*, September 22.)  
 On Tubercle in the Human Lung. By Dr. D. J. Hamilton. (*Edinburgh Medical Journal*, October.)

## MEDICINE.

BROWN ON TRANSIENT HEMIPLEGIA.—Dr. J. J. Brown (*Journal of Mental Science*, July 1877) publishes the history and *post mortem* details of a case of chronic mania which during life exhibited frequent attacks of transient hemiplegia, lasting usually one or two days, and affecting sometimes one side and sometimes the other. The attacks occurred about every week, and continued up to the time of the patient's death three years after she came under observation. The necropsy showed atrophy of the brain, with thickened and adherent membranes; after removal of the pia mater, the surface of the convolutions was seen to be dotted with dark-coloured points, varying in size from a pin's head to a split pea, which on closer inspection seemed to be spots of red softening; on section, the grey matter of the convolutions was softer than normal;\* the white substance was also soft, and in the left hemisphere presented several points of grey softening; the lateral ventricles were dilated and filled with clear fluid; the corpora striata and optic thalami, as well as the medulla, pons, and cerebellum, appeared normal. The vessels at the base of the brain were enlarged, tortuous, and varicose, in places cord-like and hard. The spinal cord was slightly congested, and presented innumerable bony plates along its whole length, but was otherwise normal. The heart was normal; the aorta was very atheromatous, the coronary arteries large and tortuous. The other organs were normal.

Microscopically, the vessels of the pia mater showed numerous miliary aneurisms: those of the brain-substance were thickened, sometimes obliterated, and some presented miliary aneurisms. The brain-cells were generally undergoing granular degeneration; some were shrivelled and atrophied. The nerve-tubes and neuroglia appeared normal; there were numerous amyloid bodies in the white matter. The spots of red softening examined in a recent state consisted of broken-down nerve-elements, molecules, and granules, degenerated brain-cells, and masses of hæmatin crystals; hardened sections showed that the softening did not extend deeply into the grey matter, seldom deeper than the large cells of the fourth layer. The spinal cord, with the exception of slight granular degeneration of its cells and the presence of amyloid bodies, was normal. In the medulla, pons cerebellum, corpora striata, and thalami optici, nothing of note was found beyond slight hypertrophy of the vessels.

Dr. Brown proceeds to argue that the repeated attacks of transient hemiplegia are accounted for by the numerous minute cortical hæmorrhages, which caused destruction of the superficial layers of grey

matter of a limited area, and irritation over a larger area; but as the lesion was small the parts rapidly recovered their function, the hæmorrhages being most numerous in the convolutions bounding the fissure of Rolando. The softening of the third left frontal convolution corresponded to the aphasia which existed during the latter part of life. [We can scarcely understand how one minute cortical hæmorrhage could give rise to hemiplegia; on the other hand, if numerous hæmorrhages occurred in the motor centre at each attack, there ought to have been complete disorganisation of these centres, considering that there had been about one hundred and fifty seizures. We are disposed to regard the hæmorrhages as being at most concomitant, and not essential causes of the paralysis, which could be sufficiently accounted for by hyperæmia, with consequent oedema of the cortex, the hæmorrhages occurring from time to time during the accession of hyperæmia as the coats of vessels here and there gave way beneath the strain. Transient hemiplegia in general paralysis and other diseases of the brain is by no means uncommon, and certainly is not always associated with the *post mortem* appearances to which Dr. Brown would exclusively refer it.—*Rep.*]

R. SAUNDBY, M.D.

PFAHL ON A LOCALISED PERITONEAL EXUDATION WHICH PERFORATED THE LUNG AND SIMULATED PYOPNEUMOTHORAX.—This case is recorded in the *Berliner Klinische Wochenschrift*, No. 5, 1877. A Polish maid-servant, aged 23, was admitted with all the signs of right-sided pyopneumothorax, with succussion-sounds and amphoric respiration. The previous history of the case was imperfect, and only the physical signs were available for the formation of a diagnosis. The *post mortem* examination revealed the nature of the case. There had been a perforating duodenal ulcer, leading to abscess between the right lobe of the liver and the diaphragm. This had pushed up the diaphragm, displaced the heart to the left and upwards, and caused bulging of the right side of the chest. An adhesive diaphragmatic pleurisy had followed, and the abscess opened into the lung. Thoracentesis was performed in the fifth intercostal space, and after the evacuation of nearly two pints of pale yellow offensive fluid the respiration became troubled; and, in spite of free stimulation, the patient died in ten minutes after the conclusion of the operation.

[The aids obtained from the case towards the correct diagnosis in any similar one seem few indeed, but allusion is made to the fact that the heart was displaced upwards, whereas in pneumothorax it should be dragged downwards. It may be doubted whether this is a point which could be relied upon.]

The author remarks upon the rarity of such cases, and mentions the only two cases in any way like his which he has been able to find on record. One is by Wurtrech in Virchow's *Handbuch der Speciellen Pathologie und Therapie* (Krankheiten der Respirations-Organen), the other by Sturges in the *Lancet*. He does not appear to be conversant with an article by Dr. Hilton Fagge in the *Guy's Hospital Reports*, vol. xix, 1874, entitled "Cases of Abscess within the Upper Part of the Abdomen." In that paper sixteen cases are collected, and several opened into the lung or pleura. It appears, it is true, that only one gave any, and that but doubtful, evidence of pneumothorax; but, after all, that occurrence is but a side issue. Given an abscess between the diaphragm and liver, or spleen and diaphragm, and it is not

\* The third anterior frontal convolution was soft, dark in colour, almost gelatinous, with hæmorrhagic spots on its surface.



unlikely to open into the chest, though it seems but rare that the abdominal are quite subordinate to the thoracic symptoms. This is the clinical fact of importance. It may or may not produce symptoms of pneumothorax.

Such cases have been but rarely recorded in medical literature, but that is probably, as Dr. Fagge remarks, because "their symptoms and course are so variable, and the publication of isolated instances might well appear likely to be of but little service in facilitating their recognition by other observers, or in gaining for them a place in scientific works on medicine." They have not been published, but they are not very rare. They more commonly result from external injury, or, as in Pfahl's case, by extension from disease in some neighbouring organ. The reporter is, however, inclined to add that whenever a general peritonitis leads to the production of much inflammatory effusion, whether it be lymph or pus, the fluid gravitates behind and above the liver and to other dependent parts, and may then become shut off by adhesions and produce a local abscess. The reporter has several times seen *post mortem* evidence of a general peritonitis localising itself in this way under the diaphragm, above the liver, once above the spleen.

Dr. Fagge refers to a very important point, viz., whether the prognosis in these cases is not really hopeful if they be recognised early, and the pus evacuated by aspiration; but enough has been done in alluding to his paper in its bearing on the present case, and it can be consulted by anyone interested in the subject who is ignorant of or has forgotten its existence. In the same volume of *Reports* is also a paper by Dr. Frederick Taylor on the same subject. —*Rep.*]

JAMES F. GOODHART, M.D.

**PORTER ON SYPHILITIC PHTHISIS.**—In a paper read before the Missouri State Medical Association, Dr. William Porter lays down the following propositions on the relations of syphilis to phthisis. 1. In a certain class of cases, syphilis reduces the system, weakens the power of resistance, and thus predisposes to phthisis in the same manner as other conditions of the body do. 2. Syphilis may cause a fibrous deposit in the lung-structure, *i. e.*, fibroid phthisis. 3. From syphilis may be produced arterial occlusion and destruction of the walls of the vessels, resulting in the death of a portion of the lung. 4. In the tertiary stage, gummata are deposited in the lung, which simulate, yet are different from, infiltrated tubercle.

Dr. Porter, commenting on the first proposition, says that one of the principal factors of phthisis is blood, so abnormal, and so deprived of its vitality, as to be incapable of supporting cell-formation, and that no disease or specific power impairs the nutrition of the blood to the same extent as syphilis, both inherited and acquired. A potent enemy to the vitality of the individual, if it be not a direct cause of pulmonary disease, is also to be found in the inhalation and possible absorption of emanations from syphilitic mucous membranes, to say nothing of the absorption of *débris* from tertiary sores by the circulatory system.

In support of the second conclusion, the author states that in the tertiary stage there are often thickening of the periosteum, fibroid deposits in the liver, and effusion of fibro-plastic material in the structure of the testes, and that, in 20 cases of chronic syphilis, collated from various sources, fibrous changes in the lungs were found; the distinction of syphilitic

fibrosis being that the base of the lung and not the apex is attacked. The occlusion of vessels is caused generally by deposit in the arteries in the form of small gummy nodules, such as are found elsewhere.

Dr. Porter believes that gummata may be located in any part of the lung just as they occur in any part of the body; but, from the cases under his observation, of which one is cited, he concludes that the deposit will be found in the neighbourhood of the larger bronchial tubes, especially those of the lower and posterior parts of the lung, and that it is not necessarily symmetrical.

The diagnosis of syphilitic phthisis depends on the history of the patient, and is not always clear; but where the physical rigors point to slowly progressing disease in the middle and lower part of the lung, the apices being free, and there is a decided history of syphilis, there is no difficulty in coming to a conclusion, which is confirmed by improvement taking place under specific treatment.

[There is a good deal of dogmatism in the paper, and most of all the cases cited do not support the conclusions they are intended to illustrate. This is especially shown as regards the third proposition, viz., that relating to syphilitic disease of the arteries, as an example of which the author cites a case of probable dilatation of a branch of the pulmonary artery.—*Rep.*]

C. THEODORE WILLIAMS, M.D.

#### RECENT PAPERS.

- A Case of Syphilis of the Adrenals, Pancreas, Liver, Kidneys, Lungs, and Skin. By Dr. F. Chvostek. (*Wiener Medizin. Wochenschrift*, August 18.)
- A Case of Hydrophobia. By Dr. H. Ritter. (*Wiener Medizin. Wochenschrift*, August 25, September 1, 8.)
- A Contribution to the Etiology and Prophylaxis of Sunstroke. By Dr. Ullman. (*Berliner Klinische Wochenschrift*, August 6, 13.)
- The Action of Increased Temperature on the Pulse. By F. Riegel. (*Ibid.*, August 20.)
- The Modern Treatment of Phthisis. By Dr. P. Dettweller. (*Ibid.*, August 27, September 3 and 17.)
- On the Physical Differential Diagnosis in Pleural Effusion. By Dr. Valentiner. (*Ibid.*, September 3.)
- Two Cases of Emphysematous Abscess between the Peritoneum and Liver. By Dr. C. Eisenlohr. (*Ibid.*, September 10.)
- Note on a Case of Aneurism of the Arch of the Aorta healed by Electro-Puncture. By Dr. Dujardin-Beaumetz. (*Bulletin Général de Thérapeutique*, July 15.)
- Treatment of Cysts and Abscesses of the Liver. By M. T. Gallard. (*Journal de Thérapeutique*, July 10.)
- Pleurisy; Copious Sero-fibrinous Exudation in a Woman aged 72; Thoracentesis; Cure. By M. J. Straus. (*L'Union Médicale*, July 28.)
- Gangrenous Angina. By M. Montaz. (*Lyon Médical*, July 29.)
- Chronic Lobal Pneumonia and Recurrent Pneumonias. By M. Charcot. (*Le Progrès Médical*, July 28.)
- Oliguria and Polyuria. By Dr. Nepveu. (*Revue Mensuelle de Médecine et de Chirurgie*, September 1877.)
- The Influence of Pleurisy on the Progress of Certain Fluid Tumours of the Abdomen. By Dr. L. H. Petit. (*Ibid.*)
- Sunstroke. By Dr. Viguier. (*Le Progrès Médical*, September 22.)
- Small-Pox and Cholera. By Dr. Frénoy. (*La France Médicale*, September 22.)
- On the Co-existence of Typhoid with the Eruptive Fevers in the same Individual. By Dr. Brochin. (*Gazette des Hôpitaux*, Sept. 22.)
- A Case of Movable Liver. By Dr. Chvostek. (*Allgemeine Wiener Medizin. Zeitung*, September 4.)
- On Subcutaneous Emphysema in Pulmonary Phthisis. By Dr. G. Pafi. (*Lo Sperimentale*, September.)
- On Epilepsy Supervening after Habitual Departures from Regimen in Persons of a highly Sanguineous Temperament, and its Treatment. By M. R. Lepine. (*Revue Mensuelle de Médecine et de Chirurgie*, August 1877.)
- Internal Diseases produced under the Influence of Fright and Mental Depression during the Bombardment of Strasbourg. By Dr. Reibel. (*Gazette Médicale de Strasbourg*, August 1.)
- On the Disturbances of the General Circulation which supervene after and under the influence of Diphtheria; also on the Prejudicial Effects produced on Children by the Application of Certain Methods of Treatment in Diphtheria. By Dr. J. Dubrissay. (*L'Union Médicale*, August 7.)
- Metallotherapy at the Salpêtrière. By Dr. Brochin. (*Gazette des Hôpitaux*, September 29.)
- On Barrack Hospitals in Germany. (*Le Progrès Médical*, September 29.)
- Sunstroke. By Dr. Brochin. (*Gazette des Hôpitaux*, October 6.)

## DISEASES OF CHILDREN.

COLOGNESE ON A CASE OF DORSAL SPINAL BIFIDA CURED WITH ELASTIC LIGATURE.—The writer (*Annali Universali di Medicina e Chirurgia*, February 1877) briefly reviews the change which has occurred in the treatment of spina bifida; how, formerly, the best success attended the cases let alone, as all active measures were so fatal; how Morton's method of puncture and injection of iodine yielded an increased number of successful cases; then came the crushing forceps of Professor Rizzoli, successfully employed in spina bifida, and also in cases of cranial meningocele.

In his case, not having any better means at hand, he used a ligature of India-rubber tubing, which caused the separation of the dorsal projection in nine days, followed by perfect healing, and closing-in of the spinal canal by eventual completion of the osseous arches.

The infant was nine days old when the ligature was applied, and became febrile for a day or two during the putrescent condition of the sphacelus produced, but rapidly regained a healthy state. The skin on the tumour was previously normal.

RUSHTON PARKER.

KJELLBERG ON CONTRACTION (FISSURE) OF THE ANUS IN CHILDREN.—The author (*Nordiskt Med. Arkiv*, Band viii, Hef 4) prefers the term contraction to that of fissure, because he considers the spasm the more essential symptom. The affection is much more common in children than is generally supposed. Thus, out of 9,098 children brought to the Polyklinik of Stockholm, it occurred in 128. Of this number 60 were boys, 68 were girls, and the majority (103) were a year old and under, no fewer than 73 being under four months of age. The contraction may be seated in the external sphincter, but the internal sphincter is much the more common site. The symptoms resemble those observed in the adult, but are less severe. In enumerating the causes, the author remarks that the fissure is by no means necessarily primary. It may be caused by the passage of hardened fæces through the contracted orifice. Further, the contraction may exist without the fissure, and *vice versa*. For treatment, the author relies with confidence upon forcible dilatation with the fingers. At the same time, he does not neglect to remove any condition that may stand in a causal relation to the affection, such as constipation, worms, rectal catarrh, etc.

FAYE ON THE SECRETION OF MILK IN THE NEW-BORN.—The author (*Nordiskt Medicinskt Arkiv*, Band viii, Hef 4) is of opinion that the fact that there is a normal secretion of milk in the new-born is not sufficiently known. He ascertained, from an examination of 120 cases, that it was absent in six only, four being boys and two girls. The distribution of sexes in the others was nearly equal. In 45 per cent. of the whole number it commenced on the fourth or fifth day; in the others, from the second to the tenth day—never later, never earlier. As a rule, the secretion commences with the fall of the umbilical cord, but the author denies the existence of any causal connexion between the two, as the exceptions to this coincidence are sufficiently numerous. The quantity of milk emitted is, in general, very small, usually two or three drops. Genser, however,

on one occasion expressed three grammes. When mastitis is produced, the secretion often disappears. Milk was never found after the first five or six weeks. It is, as a rule, very alkaline, and resembles colostrum. Under the microscope, it exhibits numerous granules and some fat-globules. The latter are ordinarily sparse, but occasionally are as numerous as in woman's milk. The analysis given by Genser is: Casein, 0.56; albumen, 0.49; sugar, 0.96; fat, 1.46; salts, 0.83; water, 95.7.

The author mentions, further, that the mammary gland of the male occasionally swells slightly at puberty, and may then contain one or more drops of a secretion resembling milk.

RALPH W. LEFTWICH, M.D.

ARCHAMBAULT ON CROUP.—In the *Union Médicale* for August 2nd, 1877, Dr. Archambault, of the Hôpital des Enfants Malades de Paris, contributes a clinical monograph on croup, dwelling chiefly upon the question of prognosis in the various forms of croup, and upon the favourable results of tracheotomy in the present day as compared with earlier times.

In considering the value of statistical returns of the mortality of croup, it must be remembered that the mortality is greater in some years than in others, being usually highest when the epidemic is extensive. Although in some epidemics a majority of cases are grave from the outset, in other epidemics most cases are benign. The most favourable years have been those in which the disease has been sporadic, as in 1868, when 31 out of 74 cases recovered. There are some points which may be observed in individual cases of great importance in prognosis, thus, well-marked angina and nasal or cutaneous diphtheria are symptoms indicating danger; hæmorrhages also indicate a grave prognosis. A point of some importance is to detect bronchitis and broncho-pneumonia, which it is difficult to do by physical examination when the larynx is greatly obstructed, such indications as a rise in temperature and increase in rapidity of pulse and respirations must often be relied on. All those cases in which croup is a complication of a specific fever, as measles, scarlet fever, typhoid, etc., must be considered unfavourable. There is usually in these cases no false membrane, but rather an ulcerative laryngitis. This complication may be detected by alteration of the voice and the slow onset of asphyxia. These cases rarely recover after tracheotomy. There are certain conditions in the patient which indicate an unfavourable prognosis, as previous debility and an age under three years. The more rapid the onset of the disease, the greater the danger; occasionally croup may pass through all its stages in 24 hours, but such cases are rare. As regards treatment, no plan of medication has a specific action upon croup, but tracheotomy has saved many lives. In 1813 Royer-Collard could find no record of a successful case of tracheotomy; in 1825 Bretonneau obtained the first cure. From 1851 to 1862 Fischer and Bricheteau collected a total of 1,011 operations, with one quarter of that number of successful cases. In New York, Jacobi had 50 recoveries in 213 operations. At the Hôpital Sainte-Eugénie, from 1855 to 1861, recoveries after operation were 1 in 6, and from 1862 to 1867, 1 in 4. At the Hôpital des Enfants, from 1866 to 1875 the recoveries after operation have been one in 3.7 cases. Early operators appear to have failed in their results from too strictly regarding the opening of the windpipe as an exit for the expul-



sion of false membranes, rather than as a means of saving life by admitting air to the lungs.

FRANCIS WARNER, M.D.

MONTI ON PROLAPSE OF THE RECTUM IN CHILDREN.—In giving an account of the practice of Dr. Monti of Vienna, in the *Philadelphia Medical Times* for August 4th, Dr. C. W. Dulles remarks that prolapsus recti occurs in children in varying grades, as of part of the mucous membrane, or the whole of the rectum up to the sigmoid flexure. The latter is usually after the former has been allowed to pass unnoticed for a long time. In most cases, however, we find only a partial prolapse occurring after constipation. Catarrh of the large intestine may be a cause of prolapse, by the frequent stools and the tenesmus occurring coincidentally with the wasting of the muscular part of the intestine. In rachitic children with such a catarrh, it not infrequently occurs, disappears for a while, and reappears with the exacerbation of the catarrh. Such cases are best treated by treating the intestinal catarrh, and by irrigation of the intestine with water, beginning with a temperature of 71.5° to 75° Fahr. and descending to that of fresh spring water.

In chronic cases, astringent irrigations with solutions of alum and tannin should be used.\*

Such are also benefited by local treatment with cauterants. The prolapsed bowel may be lightly touched with nitrate of silver in substance, making a circle round it and radiating lines along the axis of the intestine; after this, it should be replaced and confined with a suitable bandage. This should be renewed every three days for three or four weeks. If such proceedings do not effect a cure, one should use the hot iron, especially when the prolapse has lasted long and the sphincter ani is paralysed. The irons used should be small, and applied at the line where the mucous membrane covers the common sphincter. Strychnia and nuxvomica by hypodermic injection or suppository, Dr. Monti does not think of much value.

The replacement of a prolapsed rectum requires care. If a child be alarmed and scream and strain, it is best to anaesthetise him first. One must not maltreat the intestine with futile manipulations. When the intestine is replaced, it should be secured with a retainer of some sort. Dr. Monti uses, and thinks better than any of the more complicated appliances, a series of strips of adhesive plaster, which cross over the pubes and the anus, constituting a sort of artificial sphincter. Through the part opposite the anus he cuts a hole, through which the stools pass quite well, and yet the application prevents the protrusion of the rectum.

#### RECENT PAPERS.

Perinephritis in Children: Three Cases. By Dr. V. P. Gibney. *American Journal of Medical Sciences*, April.)

\* Irrigation of the large intestine, as practised by Dr. Monti, impresses one as a very valuable therapeutic measure, and acts remarkably well in his hands. It is done thus. To an apparatus like that used in Thudichum's douche, so as to secure available and easily controlled hydrostatic pressure, he attaches an elastic catheter. The child is laid on its back with its hips elevated, and he insinuates the catheter into the rectum, allows the water to flow, and, as the rectum becomes distended, he gently pushes the catheter along until it is well past the sigmoid flexure. Then the water, flowing in, fills the whole of the large intestine all the way to the caecal valve. One who has seen this measure practised by Dr. Monti cannot doubt that criticism adverse to its feasibility and utility must have originated in a failure to carry it out as he does.

Idiopathic Retropharyngeal Abscess in an Infant. By Dr. J. Pauly. (*Berliner Klinische Wochenschrift*, May 28.)  
Echinococcus in the Lung of a Child five years old. By Dr. Toepfritz. (*Berliner Klin. Wochenschrift*, June 11.)

### MATERIA MEDICA AND THERAPEUTICS.

POGACNIK ON COLD WASHINGS AND DOUCHES IN TUBERCULOSIS.—Dr. Pogacnik, of Vienna, in the *Allgemeine Wiener Medizin. Zeitung* for August 21, alleges that he recommended water treatment in tuberculosis in the form of cold frictions before Brehmer commenced his douches, and strongly maintains the superiority of his plan, which is as follows.

The patient on waking in the morning strips, and, standing on a dry cloth, sponges himself all over with water varying in temperature from 10° to 20° Reaumur (55° to 77° Fahr.) according to the temperature of the air at the time. He then rubs himself down with flesh gloves for about five minutes, completing the drying process by envelopment in a linen sheet. He returns to bed, and remains there from half-an-hour to an hour well covered up, though not sufficiently to induce perspiration. While reaction is going on, it is necessary that the lung movement should be reduced to a minimum.

Dr. Pogacnik was led to the adoption of cold water frictions in tuberculosis by observing their good effect on scrofulous glands, which, he states, diminished more rapidly under their use than under a trial of iodine or cod-liver oil, and he declares that his results in tuberculosis of the lung are not less favourable. The influence of this treatment is:

1. To promote normal action of the skin;
  2. To relieve congested states of the lung by derivation to the skin;
  3. To harden the patient, and thus enable him to pass more time in the open air;
- Increase of appetite and strength, with a lowering of the temperature are stated to follow; but these improvements are not to be expected where the pulmonary lesions are very advanced, or where the blood is disorganised; but the treatment is not contra-indicated in hæmoptysis.

Brehmer has advocated the use of local douches for the same purposes, but Dr. Pogacnik claims the following advantages for his method.

1. Cold frictions may be persevered with in hæmoptysis when douches are impossible.
2. They are more agreeable to patients.
3. Their influence is more prolonged, and therefore more likely to be beneficial.
4. They are easily procured, even among the poor, and while travelling, whereas douches can only be obtained in institutions and large establishments.
5. The douche necessitates walking exercise after its use, which exactly reverses the desired effect on the body, for by this the lungs, which have been relieved by the cutaneous reaction, are brought again into full movement instead of remaining comparatively passive, as is desirable.

C. THEODORE WILLIAMS, M.D.

BEARD ON CAFFEINE IN SICK HEADACHE.—Dr. Beard writes very strongly in favour of the value of caffeine in the treatment of sick headache. He says (*New York Medical Record*): This remedy I find to be useful in other forms of headache besides sick

headache. In the case described, there was the feeling of a band around the head, and great pain at times. Of the different forms of caffeine I prefer the citrate, since it seems to accomplish the desired results with a smaller dose, and more surely. I have not yet made up my mind in regard to the exact dose in which caffeine should be given, having been accustomed to pour it out in the hand, rather than to weigh it out. My present custom is to prescribe it in two-grain powders, with directions to repeat every half-hour until the headache disappears. The failures with caffeine are, I am persuaded, often due to timidity in the use of it. It is a powerful, but, in reasonable doses, not dangerous remedy. One case has been brought to my attention—the wife of a physician—where there was an idiosyncrasy that could not endure caffeine; but, as a rule, the only unpleasant effect it produces is wakefulness, and that is only observed when the remedy is given late in the day. When this remedy is given in a dose just adapted to the needs of the sufferer, it quickly and perfectly removes the pain in the head, and the nausea. I have known it to produce this effect in less than fifteen minutes.

The use of caffeine in headache seems to me to be one of the most important of the special therapeutic advances of our time; it is a genuine and solid reality, the relief it produces being too speedy and too frequent to be accounted for by coincidence or mental influence. It deserves to rank just after chloral, bromide of potassium, hypodermic injections, and electricity. Its superiority to guarana is very decided. Caffeine, it will be remembered, is the active principle common to coffee, tea, chocolate, and guarana, and is preferable to the latter in the treatment of headache, not only because it is more sure and speedy, but also because it is more convenient and agreeable, and is never refused by the stomach. Guarana must often be given in bulk, and withal is not a little nauseating both in taste and odour. Sometimes patients throw it up at once. Various other modes of treatment of headache—such as electricity and carbonic acid, must be practically useless for the majority of cases, since they cannot be brought to bear when needed—that is, at the outset of or during an attack. It is better to give the citrate of caffeine just as the headache is coming on, but it may be given with success at almost any stage, and when the proper dose is taken it seems to take up pain and bear it away.

Dr. Beard remarks that the marked relief obtained in the case of headache related by him suggests the query whether caffeine may not be of service in the pain of spinal irritation (myelasthenia) and in general neuralgia and hay fever. Might it not be administered in small doses in inebriety, to sustain the nervous system after the habit of drinking is broken off?

**BISHOP ON EXTRAORDINARY TOLERANCE OF A POISONOUS DOSE OF CHLORAL-HYDRATE.**—Dr. Phaniel E. Bishop, of Pawtucket, relates in the *Boston Medical and Surgical Journal* of September 6th, the following case. On the evening of July 12th, Mr. P. R., aged 32, came into Dr. Bishop's office, suffering from nervous prostration and loss of sleep, consequent upon the free use of alcoholic liquors. He had been drinking every day since the 4th. He did not present any marked symptoms of delirium tremens. Dr. Bishop prescribed strong coffee, beef-tea, aromatic spirits of ammonia, and gave him twenty grains of Dover's powder to take at bedtime.

Next evening, he was called to see him, and learned from his wife and others that he had not slept for sixty hours. He presented a typical case of delirium tremens. Dr. Bishop wrote the following prescription: *R*. Chloral-hydrate,  $\bar{3}$  ss.; Ext. scutillariæ fluidi,  $\bar{3}$  j.; Syr. zingiberis, q. s. ad.  $\bar{5}$ ij. A teaspoonful to be taken in an ounce of brandy every half hour until the patient sleeps.

A few minutes after receiving the first dose, he seized the bottle from his wife's hand, and before he could be prevented swallowed ten drachms of the mixture. Dr. Bishop immediately stirred three tablespoonfuls of ipecacuanha root (about half an ounce) and one teaspoonful of the sulphate of zinc (fully one drachm) into about a pint of warm water, and with great difficulty compelled him to swallow it. It produced no vomiting. A stomach-pump could not be procured.

During the first hour, his pulse rose to the highest point, namely, 132. In the third hour, it had come down to 88, and there remained unchanged, full and soft. The temperature was often taken, and never varied from 99° Fahrenheit. He slept thirty-six hours. At the end of eighteen hours, he could be aroused so that he could take liquid nourishment in abundance, but to keep him awake for a few minutes was simply impossible. During sleep, the whole body was constantly bathed in a warm perspiration. Dr. Bishop attributed this to the large doses of ipecacuanha and zinc. To ascertain whether the mixture was deficient in strength, Dr. Bishop put one drachm into a draught for a lady, and she slept soundly for ten hours. Two days afterwards, he was called to another man suffering from delirium tremens, who had not slept for thirty-six hours. Four doses given at intervals of fifteen minutes caused a natural profound sleep of eighteen hours' duration, followed by complete recovery. The amount taken by Mr. R., a trifle over one hundred and sixty-five grains, is the largest dose which was not fatal that Dr. Bishop has ever heard mentioned or read of; and that there should not arise one single alarming symptom, such as diminished temperature, sighing respiration, a slow feeble pulse, or pallor of the features, renders the case remarkable. Mr. R. awoke entirely relieved from his trouble.

**BRETHENOUX ON SALICYLIC ACID AND ITS DERIVATIVES IN THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM.**—M. Brethenoux, of Montpellier, in a graduation thesis, endeavours to determine the value of salicylic acid. He refers to the statements of Maclagan, Broadbent, Büss, Stricker, Riess, Schultze, Gueneau de Mussy, Lépine, G. Séé, &c., as to its success in the treatment of acute rheumatism. With it M. Combal, of Montpellier, has also had some remarkable cures. One fact to be noted is that the pulse and the temperature invariably fall under the influence of this remedy at the same time as the pains are relieved. Thus the temperature, which was 102° Fahr. in the morning, and 104.36° Fahr. at night, fell to 100.4° and 100.9°, then to 99.86° and 100.22°. The pulse, which was at 96 and 106, fell to 80 and 76. Relapses have also been noted after the drug was no longer given. M. Brethenoux afterwards enumerates the undesirable effects which have been mentioned by various writers as being produced on the digestive organs, the faculties, the urinary passages, nutrition, &c. He then goes on to the failures, and, finally, to the bad results. Here he recounts a very unfortunate



and remarkable case which occurred in M. Combal's hands.

A man aged 21, of a rheumatic family, and himself rheumatic since he was seven years old, came into the hospital on the fifth day of an attack of acute articular rheumatism. He took  $1\frac{1}{2}$  grammes ( $22\frac{1}{2}$  grains) of salicylic acid, 2 grammes on the next day,  $2\frac{1}{2}$  grammes on the seventh and eighth days. On the ninth day the pains had vanished as if by magic, but the excitement and the rise in the temperature caused M. Combal to fear the onset of an attack of cerebral rheumatism, and in fact at eleven o'clock the next morning the patient became delirious, general convulsions ensued, and he died in a state of coma at one o'clock the next morning. This unfortunate case is important in relation to those of Empis and Jaccoud. M. Brethenoux relates some others of the same kind. Hoppe-Seyler and Carter saw cerebral rheumatism develop itself. It was cured by the latter with cold baths, but carried off the patient of the first-named physician. Jacob, Clifford Allbutt, and Stuger also record fatal cases, of which M. Brethenoux gives detailed analyses. He sums up with the following conclusions. 1. Salicylated preparations are very powerful medicines in the treatment of acute articular rheumatism, for this reason they deserve to be used. 2. But during their administration some bad results have supervened, of which some must be imputed to their influence, and much caution must be exercised in their administration.

PLANCHON ON THE BARK OF HOANG-NAN.—According to M. Planchon (*Journal de Pharmacie et de Chimie*, May) the general characters of this bark indicate a very close affinity with false *Angustura* bark, as it possesses, like the other, an ochre-coloured tissue that is coloured dark green by nitric acid, and an inner zone that is stained of a blood-red by the same reagent. It also furnishes the two alkaloids of false *Angustura*, strychnine and brucine. Its anatomical structure and external appearance show, however, that, although closely allied, it is not identical. It has been mentioned by the missionaries of Tong-king as very valuable against leprosy and hydrophobia.

PASTEUR ON THE CINCHONA ALKALOIDS.—M. Pasteur has the following remarks in the *Journal de Pharmacie et de Chimie* for May 1877.—1. *Quinidine* resembles *quinine* in being coloured green by the successive addition of chlorine water and ammonia, and is isomeric with it. 2. Both these bodies are transformed under certain conditions into a new isomeric base, *quinicine*. 3. The quinidine of Henry and Delondre differs essentially from quinine by its rotatory power, which is to the right and considerable, whilst that of quinine is to the left, and much less. 4. The quinidine of Winckler differs completely from the true quinidine, which is isomeric with quinine; it is, on the contrary, isomeric with cinchonine, and accordingly should be called *cinchonidine*. 5. Cinchonine and cinchonidine are both transformable into a new organic isomeric base, *cinchonicine*. There are, therefore, the two following series of alkaloids:

Quinine, quinidine, quinicine—all three isomeric.  
Cinchonine, cinchonidine, cinchonicine—all three isomeric.

As M. de Vry has pointed out, quinidine forms with hydriodic acid a very slightly soluble neutral salt, requiring 1,250 parts of water at 15° Cent. (59° Fahr.) to

dissolve it. A bark containing quinidine if treated with strong alcohol, furnishes an extract that yields crystals of hydriodide of quinidine on the addition of some drops of hydrochloric acid.

HOOXMAN ON NEUTRAL TANNATE OF QUININE.—M. P. Hooxman (*Journal de Pharmacie et de Chimie*, May 1877) alleges this to be an insipid preparation that can be administered to children without difficulty. One part of sulphate of quinine is dissolved in distilled water containing a sufficiency of sulphuric acid; the quinine is precipitated by sodic hydrate, and dissolved up in alcohol (10 parts), some warm water being added. In another capsule 3 parts of tannic acid are dissolved in 60 parts of distilled water, and into this the solution of quinine is slowly poured. Heat is applied for about 15 minutes, the precipitate separated by filtration, and thoroughly washed with hot water. The tannate thus obtained upon the filter is finally dried.

T. CRANSTOUN CHARLES, M.D.

STOKES ON A CASE OF SUCCESSFUL TRANSFUSION.—In the *American Supplement to the Obstetrical Journal* for June 1877 there is related a case of transfusion in a boy of nine years. He was suffering from typhoid fever, but after a few days Dr. Stokes noticed that the saliva was bloody, his nose bled freely, and in addition to this he was passing blood in his urine. Each passage of urine contained, as nearly as could be judged, from two to five ounces of blood. This state of affairs continued for five days, when it was evident the child would die unless the hæmorrhage was arrested. It was resolved to transfuse. Two and a half ounces of the father's blood, defibrinated, were injected into the right median vein. The next urine passed was entirely free from blood; there was no albumen, pulse, 136. On the second day after the transfusion he lost a little blood from picking his nose, to do which the child had an irresistible desire. Numerous petechial spots appeared on his arms, neck, and feet. From the third day he rapidly recovered. Dr. Stokes remarks that this remarkable and gratifying result following the use of defibrinated blood in a child apparently in *articulo mortis*, does not confirm the views of Lesser that in purpuric hæmorrhage direct transfusion alone is of value.

FANCOURT BARNES, M.B.

BARNAY ON THE USE OF NARCEINE AND CODEINE.—M. Claude Bernard's researches have already demonstrated that narceine is the most soporific substance in opium. Nevertheless, this substance is very little used in therapeutics; and with the object of bringing its properties clearly to light M. Barnay has undertaken comparative researches on this alkaloid, as well as on codeine and morphine. According to M. Barnay, narceine ought to take the first place among the alkaloids of opium. His experiments show that it acts specially as a hypnotic, procuring sleep resembling normal sleep, followed by an absolutely normal awakening; it does not, like morphia, produce nausea, vertigo, and stupefaction, neither does it bring on irritation of the skin or convulsions like codeine. According to M. Debout, narceine, in addition to its hypnotic qualities, exercises a salutary influence in chronic bronchitis; it lessens the cough and modifies the expectoration. M. Béhier has always found it to ameliorate the general condition of phthisical patients both by lessening the cough and expectoration and lessening

the diarrhoea. M. Jaborde has obtained similar results in phthisis, and has also favourably modified the progress of whooping-cough by its use. The only inconvenience with which it can be charged is that it has in certain cases occasioned difficulty in voiding the urine. It may be administered in the same way as morphia, either by hypodermic injection or by the stomach, though it may be noted that Trousseau and Pidoux, in their *Traité de Thérapeutique*, do not recognise any advantage in the hypodermic method, on account of the slight solubility of the substance. At present, narceine is by no means generally found in the chemists' shops, but when medical men make up their minds to give to this substance the place it deserves in therapeutics, this difficulty will naturally remove itself. The tendency of codeine to produce convulsions is, according to M. Barnay, so great that it should be excluded from therapeutics. It is an interesting fact that up to a certain and large dose it appears innocuous, but if this dose be exceeded by so small a quantity as one to two milligrammes, convulsions may suddenly appear and bring on death.

PUTZEYS ON THE INFLUENCE OF BROMIDE AND IODIDE OF POTASSIUM ON GASTRIC DIGESTION.—Dr. Putzeys has laid before the Belgian Academy of Medicine a series of experiments in artificial digestion, in which he substituted hydriodic and hydrobromic acids for hydrochloric acid. He arrives at the following conclusions (*Bull. de l'Acad. de Belgique*, 1877, tome xl, p. 106). 1. Whatever may be the proportion of hydriodic acid existing in the digestive fluid, it cannot replace hydrochloric acid, its action being at once weaker and slower. 2. Bromide and iodide of potassium are not taken with equal tolerance if they are ingested at the moment when the stomach is called into action. He deduces from this, as a practical consequence, that it is for all reasons preferable to administer these two salts, but especially the iodide, half an hour or an hour before meals, when the stomach is empty, and its mucous membrane is covered with a coat of mucus, of which the reaction is neutral and sometimes even alkaline. Dr. Depaire, who has reported on these experiments, believes that they are not so decisive as Dr. Putzeys thinks, because the experimenter used fibrine dried at 110 deg. Cent. (230 Fahr.).

DRAGENDORFF ON THE ACTIVE PRINCIPLE OF ERGOT (SCLEROTIC ACID).—The pharmaceutical journals of last year contained a condensed summary of the important investigations of Prof. Dragendorff, of Dorpat, and M. Podwissotzky, on the constituents of ergot, in which they announced the discovery of a proximate principle of an acid character and exerting in a high degree the specific effects of the drug. Since then, the authors have published their results in detail (*Archiv für experimentelle Pathol. und Pharmacolog.*, 1877, No. 5). They give full details of the methods of preparation.

When properly purified, sclerotic acid is hygroscopic but not deliquescent, which circumstance distinguishes it advantageously from the commercial purified extracts of ergot. It is found in these in greater or lesser quantity, according as a weaker or a stronger alcohol was employed in exhausting the ergot. A few commercial extracts were found to be very deficient. In Bonjean's and Wernich's preparations and in Wiggers' osmazom it exists in considerable quantity, while scleromucin is almost en-

tirely absent, as is the case in all alcoholic extracts of ergot. In Zweifel's preparation, the acid occurs in a tolerably pure state, in a less pure condition in Buchheim's. In alcoholic tinctures of ergot, and in Wiggers' ergotin it is only present in traces, or is entirely absent.

Good ergot contains about 4 to 4.5 per cent. of the acid, although samples are met with which contain scarcely 1.5 to 2 per cent. "*New Remedies*", in referring to the subject adds: Sclerotic acid (acidum scleroticum or sclerotinum) is quoted in our prices-current at £5 per ounce. It is administered hypodermically in doses of 1-16th to 1-12th of a grain.

OLDONI ON THE TREATMENT OF CROUP.—Dr. S. Oldoni relates in the *Annali Universali* for March, five cases of croup observed during the epidemic at Spezia, in which he successfully employed copaiba and cubebs. His plan was to give to adults, every two hours, a dessert-spoonful of a syrup composed of 14 grammes (about 5 ounces) of balsam of copaiba, 20 grammes (about 7 ounces) of powdered gum, 50 grammes (about 17½ ounces) of water, and 14 drops of essence of mint; and also, every two hours, a table-spoonful of a mixture consisting of 12 grammes (186 grains) of recently powdered cubebs and 240 grammes (8 ounces) of syrup. For children, the dose was reduced. The malady disappeared in a period of two or three days, rarely extended to seven.

Four of the five cases were children under four years of age; some affected with simple croup, others with croup complicated with diphtheria. The condition of the patients when first put under treatment was very grave; there was high fever, the submaxillary glands were engorged, the voice and crying were weak, the cough harsh, and there was marked dyspnoea. The beneficial effects of the medicine above described occurred without the use of emetics, mercurials, or any other treatment.

BARTHOLOW ON BROMIDE OF POTASSIUM IN TIC DOULOUREUX.—In the *Cincinnati Clinic* of August 11th, 1877, Dr. Roberts Bartholow calls attention to the value of the bromide of potassium in cases of epileptiform tic douloureux. This disease is described by Trousseau as follows. "An individual, who for an instant before experienced no unusual sensation, and was totally free from suffering of every kind, is suddenly seized with horrible pain while speaking. He is then seen to put his hand on his face and press with violence; he rubs with extraordinary energy, so that finally the repeated frictions destroy the hair on that side; he compresses his head between his hands and groans with the anguish. This scene lasts five to fifteen seconds,—one minute at most,—and then he suddenly becomes quiet without having had convulsions. The individual resumes his interrupted discourse until he shall be seized by a fresh attack. Such is *epileptiform neuralgia*. Or it may be at the moment when the attack begins all the muscles of one side of the face are agitated by rapid convulsive attacks, which, as in the preceding case, will be accomplished in a minute or less; such is *convulsive epileptiform neuralgia* or *tic douloureux*."

To such a case Dr. Bartholow gave a drachm of the bromide of potassium three times a day. Bromism was quickly induced, but the effect on the tic douloureux was immediate and most striking; the paroxysms ceased at once, and the patient has not had any pain since.



**SQUIRE ON THE FIXED OIL OF STAVESACRE.**—Mr. Balmanno Squire (*Pharmaceutical Journal and Transactions*, No. 365) speaks of the fixed oil of stavesacre as a specific parasiticide for pediculus capitis, p. corporis, p. pubis, and acarus scabiei. Mr. Squire first used an ointment prepared from the seeds, but, owing to its unsightliness, later selected the oil of the seeds, extracted by ether or better by simple expression. It is colourless and odourless, and non-irritant, an important advantage it possesses over sulphur in the treatment of itch.

**BEARD ON THE TREATMENT OF HAY FEVER.**—Dr. G. M. Beard, in the *New York Medical Record* for August 11, mentions the case of a gentleman who suffered severely from hay fever. Dr. Beard ordered the following treatment: 1. Central galvanisation; 2. A mixture of Fowler's solution and nux vomica, internally (3 to 5 drops to 10 or 15 drops); 3. The inhalation of a mixture of equal parts of camphor, carbolic acid, and chloroform; 4. Gin and glycerine at night for the asthma and cough. This plan of treatment was based on the nerve-theory of hay fever, and the result so far forth confirmed the theory. The central galvanisation gave, as it always or almost always, does, immediate relief. The nasal symptoms were quickly helped by the carbolic mixture, the asthma and cough by the gin and glycerine. Dr. Beard used experimentally, and for the sake of instruction, several other remedies. The spray of bromide of ammonium, as suggested by Dr. Seguin, gave relief to the throat symptoms. A mixture of chloral and bromide of potassium and ammonium gave relief at night for a number of hours. The chloral should be used in small doses. Nitrite of amyl gives quick but brief relief in the asthma. On the whole, it has disappointed Dr. Beard in hay fever and asthma.

This patient, whose sufferings had been very great, rapidly recovered. That his recovery was not due to an interval in the disease alone Dr. Beard believes to be clear, from the fact that the effect of the remedies was felt at once. He was advised to continue the Fowler's solution and nux vomica to provide against relapse.

**MONTI ON THE TREATMENT OF DIPHTHERIA.**—In notes communicated to the *Philadelphia Medical Times* of August 4th by Dr. C. W. Dulles, it is stated that Dr. Monti of Vienna adopts the following treatment in the diffused, or more dangerous, form of diphtheria.

When the disease is recent, with redness and swelling of fauces, use cold applications to the neck, and give pieces of ice to be held in the mouth and swallowed. Later, when the membrane is formed, use irrigations of water upon the parts. The main points to be attained by these are cleanliness and coolness, which are of the utmost importance. To the water may be added with great advantage two per cent. of chlorate of potassium, or one may use this prescription:

R Sodii salicylatis, 4 grammes;  
Aque fontis, 200 grammes;  
Spiritus vini rectificati, 1 gramme;

which should be injected against the walls of the fauces and pharynx every two or three hours.

When the membrane is thick and very ill-looking, it should be removed with a piece of sponge held in the forceps or attached to a stick. The sponge may be moistened with water or tincture of iodine.

Dr. Monti holds cauterants to be injurious, as they irritate the inflamed parts.

General treatment must be most scrupulously carried out. He uses quinine, iron, and salicylate of soda. Quinine he gives at first in doses proportioned to the fever, varying also with the age of the child. The most careful and sustaining nourishment must be given to the little patient—milk, soup, wine, and meat-juice. He recommends as a beverage the following solution:

R Potassii chloratis, 3 parts;  
Aque fontis, 200 parts;  
Syrupi, 25 parts.

**ALT ON CAROBA.**—Alt (*Pharmaceutische Zeitung*, Nos. 29 to 42) again draws attention to the valuable properties of the leaves of *Jacaranda procera* or *Brazilensis*, which is known in the market as *Caroba*, or *Caa-roba* or *Caraiba*. It is said to be a most effective remedy in the various forms of secondary syphilis, promoting increased action of the skin, and exciting appetite. It is generally prescribed in the form of decoction. The powder or extract is used as a local application to syphilitic sores.

**MARKONNET ON NEW FISH-LIVER OIL.**—Dr. Markonnet, of St. Petersburg (*ibidem*), has made experiments with the oil obtained from the livers of lampreys (*Petromyzon fluviatilis*), which are obtained in very large quantities at the mouths of rivers emptying into the Caspian Sea. It looks like olive oil, has a tolerably agreeable taste, is thinner than cod-liver oil, contains more iodine than the latter, and is an efficient substitute for it. Its price is only about one-eighth of that of cod-liver oil.

**LLOYD ON HYPOPHOSPHITE OF BERBERINA.**—Mr. Lloyd (*American Journal of Pharmacy*) says that the hypophosphite is a much more soluble salt than any other of berberina. It is prepared in the following way. Heat a watery solution of berberina sulphate at 180° F. with litharge for six to twelve hours. The sulphuric acid then unites with lead. Filter off the liquid (the alkaloid is very soluble in water), remove excess of lead by hydrosulphuric acid, and filter again. Evaporate to a small bulk, add solution of hypophosphorous acid in slight excess, and cool. Remove the magma of fine crystals and dry them.

**GENOIS ON EMULSIONS.**—To make emulsions of turpentine and other essential oils, Genois (*ibid.*) employs the following process. Place 10 grains of perfectly dry finely powdered soap into a round-bottomed mortar, add one ounce of the oil by degrees with constant trituration; when well mixed, transfer to a bottle, add one-half an ounce of water, shake vigorously; add a little more water, and shake again. This makes a very white emulsion, which will not separate.

#### RECENT PAPERS.

The Hypnotic Action of Lactate of Soda. By Dr. W. von Bötticher. (*Berliner Klin. Wochenschrift*, September 10.)

Eruption after Quinine. By Dr. Scheby-Buch. (*Ibid.*)

Quinine-Exanthem. By Dr. Pflüger. (*Ibid.*)

On the Therapeutic, Hygienic, and Disinfectant Qualities of Carbolate of Soda, and of its almost Specific Action in Whooping-Cough. By M. Pernot. (*Lyon Medical*, September 22, 1877.)

On Some Little-Known Therapeutic Applications of Sulphate of Copper. By Drs. Levi and Barduzzi. (*Commentario Clinico di Pisa*, No. 8.)

On Fuchsine and Rosaniline in the Treatment of Albuminuria. (*La Province Médicale*, July 18.)  
 Sialogogue Properties of *Arenaria Serpyllifolia*. By Dr. Bazin. (*Journal de Thérapeutique*, July 10.)  
 Metallotherapy in Professor Verneuil's Wards at the Lariboisière Hospital. By Dr. Burg. (*Gazette Médicale de Paris*, August 4.)  
 On Bromide of Zinc in the Treatment of Epilepsy. By M. Bourneville. (*Le Progrès Médical*, August 11.)

## OBSTETRICS AND GYNÆCOLOGY.

ANDERSON ON OVARIOTOMY BY THE ANTISEPTIC METHOD.—Dr. W. F. Anderson of Salt Lake City, Utah, relates, in the *Boston Medical and Surgical Journal* for June 9, a case in which he performed ovariectomy under antiseptic precautions. The patient was a married lady aged 42, the mother of one child, about twelve months old. On January 31, 1877, after administering chloroform and maintaining its influence with ether, a six-inch incision from umbilicus to pubes was made under a continuous carbolic spray. Several cysts were tapped, a quantity of the serum unavoidably flowing into the peritoneum. Some extensive adhesions to the abdominal walls were first tied with animal carbolised ligatures, then severed. The cyst was removed with some difficulty; its rather broad pedicle was tied securely with the same ligatures, severed with the écraseur, and returned. The womb and remaining ovary were healthy. The pelvis was carefully cleansed of serum and blood; the incision closed with deep-seated and superficial ligatures, and an eight-inch indiarubber tube, extending into the depths of Douglas's pouch, was left in the lower part of the incision. Lister's carbolised dressing was applied, and the patient, much prostrated (the operation having consumed over an hour), was removed to a comfortable bed. Opium and cayenne were freely given; brandy, milk, and beef tea *ad libitum*. The room was well ventilated through a fireplace, and the atmosphere kept constantly impregnated with carbolic acid vapour, and a steady temperature of about 80 deg. F. maintained. Reaction came on in about twelve hours, and not an untoward symptom manifested itself during recovery. Early in March she returned home in good health. The solid portion of the cyst weighed seven pounds, being multilocular, and containing nearly two gallons of serum.

STEPHENS ON SPONTANEOUS REDUCTION OF THE INVERTED UTERUS.—In the *American Supplement to the Obstetrical Journal of Great Britain and Ireland*, July 1877, Dr. Stephens relates a case of spontaneous reduction of an inverted uterus in a woman after her third labour. The labour was short and easy. Five minutes afterwards, flooding commenced; and, on removing the placenta, Dr. Stephens found a pyriform tumour projecting through the os into the vagina, with a considerable portion of the placenta adhering closely to one side of its surface. The next day, the tumour remained unchanged, but, notwithstanding that prolonged efforts were made by Dr. Lartigue and Dr. Stephens, reduction was not effected. The patient would submit to no further manipulation until two months afterwards, when a vaginal examination revealed a complete return of the uterus to its normal condition.

STERNSCHUSS ON A CASE OF OSTEOMALACIA OF THE PELVIC BONES.—In the *Medicisch-Chirurgisches Central-Blatt*, May 1877, there is reported a

case of osteomalacia by Dr. Sternschuss. The patient, 33 years old, had given birth to four living children, and, since the last live child, had had three miscarriages. During the eighth pregnancy, she complained of severe pelvic pains, especially over the sacral region. In her ninth pregnancy, these pains returned with increased severity. After repeated examinations, Dr. Sternschuss found that the ischial bones had closely approached each other as well as the rami of the pubes, which projected in the usual beak-like manner. Dr. Sternschuss was called to the patient in labour on June 17; the os was dilated to the size of a thaler; the pains were regular. The friends would allow no operative interference. The result was that, on the fourth day, the patient was still in labour, and Dr. Sternschuss was at last sent for to operate, as she was nearly dead.

He perforated the head, and, in the absence of a cephalotribe, brought the head through by a finger in the child's mouth. The mother recovered after a four weeks' attack of purulent endometritis. She can only stand with the aid of support. On examination some weeks later, Dr. Sternschuss found the vagina divided into two canals by the jamming together of the pubic bones.

SIREDEY AND SINÉTY ON OVARIAN FUNCTIONAL ACTIVITY WITH AMENORRHEA.—In the *Annales de Gynécologie*, July 1877, Drs. Siredey and Sinéty relate the case of a woman, aged 38, who was admitted into the Lariboisière under M. Siredey, and died from pulmonary tubercle. Although from the age of 12 up to within four years of her death the patient had experienced lumbar pains, often accompanied with migraine, at regular monthly periods, she had never menstruated. At 26 she married, but her condition in no way changed, she was sterile. At the necropsy, the external genitals were found to be normal; the uterus presented a diminished cavity; the cavity of the body of the uterus being exceptionally small, whilst the cavity of the cervix was normal. The walls of the uterus were thickened by increased connective tissue. The ovaries were invested with false membranes, which slightly augmented their apparent diameters. Histological examination showed numerous cicatrices in various retrograde stages, presenting all the characters of the yellow bodies of menstruation. There were also present normal follicles, as well as follicles containing ovules. Some follicles presented the appearance of recent dehiscence. Drs. Siredey and Sinéty remark that this case is an additional proof of the independent activity of the uterus and ovaries, both as regards development and physiological functions.

BOULTON ON CHRONIC INFLAMMATION AND SIMPLE ULCERATION OF THE OS AND CERVIX UTERI.—In the *Obstetrical Journal of Great Britain and Ireland* for August 1877, Dr. Percy Boulton dwells on the superiority of local over constitutional treatment of inflammation and ulcerations of the os and cervix uteri. He points out the uselessness of the German hydropathic institutions in such cases. The remedies are nitrate of silver, tincture of iodine, glycerine of carbolic acid, and the thermo-cautery. Saline purgatives are found of value in plethoric subjects.

HYATT ON THE TREATMENT OF POST PARTUM HÆMORRHAGE.—In the *Obstetrical Journal of Great Britain and Ireland* for September, Dr. Otis Hyatt



calls attention to his priority in introducing the mode of arresting *post partum* hæmorrhage by means of an India-rubber bag. In a paper read November 1874, Dr. Hyatt detailed his mode of dealing with *post partum* hæmorrhage. An India-rubber bag or a Barnes's dilator is introduced into the uterus and gradually distended until it fills the uterine cavity and presses on the patent mouths of the bleeding vessels. Further hæmorrhage is thus rendered impossible, and, on the withdrawal of the bag, the uterus readily contracts. Since the above paper was read, Dr. Hyatt has resorted to this mode in three cases with success. In one case, there had been a miscarriage of a three and a half months' embryo; the placenta was attached high up, she was bleeding freely, and was very weak. Dr. Hyatt passed a Barnes's bag into the uterus and distended it with water, gave a large dose of ergot and morphine, and left her till the next morning, when strong expulsive pains set in, and both placenta and bag were expelled. She lost no blood after the bag was introduced.

**VALENTA ON ARTIFICIAL ABORTION IN THE VOMITING OF PREGNANCY.**—In Betz's *Memorabilien*, Band 22, Heft 2, Dr. Alois Valenta, after remarking that catheterisation of the uterus is a most successful and ready method of bringing on premature labour, proceeds to relate a case of obstinate vomiting in a woman aged 36 years, the mother of ten children, all of whom had been born without any untoward events. All the remedies mentioned in the literature on the subject were tried in succession, and all failed. Dr. Valenta determined to bring on abortion by means of a catheter introduced into the uterus. Accordingly on August 2, at 8.30 a.m., an English flexible catheter was introduced into the uterus and left there; at 5.30 p.m. next day a four months' male fœtus was expelled. There was some bleeding afterwards from the retension of the placenta, which had to be removed; the bleeding was controlled by a subcutaneous injection of ergotin. The patient made a perfect recovery. In the same journal Dr. Valenta also relates a case of induction of premature labour by means of uterine catheterisation, with an equally successful result.

**POLAILLON ON MALFORMATION OF THE UTERUS AS A CAUSE OF ABNORMAL PRESENTATION AND VICIOUS INSERTION OF THE PLACENTA.**—In the *Annales de Gynécologie*, September 1877, Dr. Polaillon relates a case of placenta prævia with transverse presentation of the fœtus. The patient died, after turning, from hæmorrhage. At the necroscopic examination of the uterus it was found to be heart-shaped, with two cornua, the fundus being depressed in the centre and thus forming a ridge on the inner surface of the uterus. The author then proceeds to argue that the ridge on the fundus uteri was the cause of the transverse presentation, inasmuch as it transferred the longest diameter of the uterus from the fundus and os to the space between the two cornua. This does not happen where the uterus is completely bipartite; in these cases, the ovoid shape of the containing cavity is preserved, and the child presents by the breech or vertex. Dr. Polaillon then proceeds to draw attention to the fact that, when a woman has once had placenta prævia, she is extremely liable to present the same complication in subsequent pregnancies. Although Dr. Polaillon is unable to explain the abnormal insertion of the placenta in malformed uteri, it is certain that the two conditions are commonly coincident. The

altered shape of the uterine cavity satisfactorily accounts for the abnormal presentations accompanying it.

FANCOURT BARNES, M.B.

**THOMAS ON THE PROPHYLACTIC TREATMENT OF PLACENTA PRÆVIA.**—Dr. T. Gaillard Thomas states (*American Practitioner*, March, and *New York Medical Record*) that we have by no means reached a point in the treatment of this alarming complication of labour, where we may feel sure that we have at our disposal means to ward off the danger of death from either mother or child with certainty, while skilful management may accomplish a great deal. In many instances the services of the practitioner are not attainable, and a fatal loss of blood may occur, or the mother, from repeated hæmorrhages, is apt to come to her labour exsanguinated and exhausted both in body and mind. As the only remedy, the induction of premature delivery is recommended after the viability of the child is established. As for the objection that the child which has had less than nine months of intra-uterine existence has not as good a prospect of life as one that has arrived at full term, it is urged that such would have a brighter prospect when dependent upon pulmonary respiration for the aëration of its blood than upon a crippled and bleeding placenta. For the mother the safety would be doubtless greater. Dr. Thomas believes that, when premature delivery becomes the recognised and universal practice for placenta prævia, the statistics of the present day will be replaced by others of a far more satisfactory kind. Eleven cases are adduced in support of this position of living children being delivered, all of the mothers, with one exception, eventually recovering; while, according to the statistics of Sir James Simpson, based upon the analysis of 399 cases, one-third of the mothers and over one-half the children were supposed to be lost; and Reid computed the mortality as one in four and a half mothers, while the large majority of the children were lost.

#### RECENT PAPERS.

- Gastro-Elytrotomy and Ablation of the Uterus. By Dr. P. Budin. (*Le Progrès Médical*, September 22.)  
 Dermoid Cyst of the Right Ovary; Serious Complications brought on by Torsion of the Pedicle; Ovariectomy; Pelvic and Abdominal Adhesions; Cure. By M. Kœberlé. (*Gaz. Méd. de Strasbourg*.)  
 Extraperitoneal Hæmatocele. By Dr. M. Paschka. (*Allgemeine Wiener Medizin. Zeitung*, August 14.)  
 The Etiology of Fibromyomata of the Uterus. By Dr. A. Röhrig. (*Berliner Klinische Wochenschrift*, July 23 and 30, August 20 and 27.)  
 Harmlessness of Subcutaneous Injections of Morphia during the Pregnancy of an Opium-Eater: Birth of a Healthy Living Child. (*Deutsche Medizin. Wochenschrift*, July 28 and August 4.)  
 Early Pregnancy Simulating Acute Uterine and Circum-uterine Inflammation. By Dr. G. J. Engelmann. (*St. Louis Medical and Surgical Journal*, May.)  
 The Anatomy and Diagnosis of the partly Extraperitoneal, partly Intraperitoneal, Development of Ovarian Tumours. By Dr. K. Stahl. (*Centralblatt für Gynäkologie*, July 7.)  
 On Missed Labour. By Dr. Eugène Muller. (*Gazette Médicale de Strasbourg*, October 1.)  
 Note of a Case of Hæmatocele Simulating a Retroverted Gravid Uterus. By Dr. C. E. Underhill. (*Edinburgh Medical Journal*, October.)

#### OPHTHALMOLOGY AND OTOTOLOGY.

**MAUTHNER ON SCLEROTOMY IN GLAUCOMA.**—Professor L. Mauthner of Vienna (in the *Wiener Medizin. Wochenschrift* for July 1877) has a long communication on the advantage of sclerotomy in glau-

coma over iridectomy. In the year 1869, Berlin, at the Heidelberg Ophthalmological Congress, remarked that, in certain cases of chronic glaucoma, very rapid loss of vision follows the later operation, without any hæmorrhage having occurred; and he attributed these cases to the supervention of atrophy of the optic nerve as the result of the iridectomy. Liebreich answered to this, that the swelling (*Erblassen*) of the papilla after iridectomy is a constant symptom, and could not be regarded as the commencement of atrophy. Dr. Mauthner has no doubt that cases frequently occur in which vision is lost after iridectomy, where there is absolutely no visible cause to account for the unfortunate circumstance. These facts are mentioned in disparagement of Von Gräfe's operation, and, as a reason why it is desirable to give sclerotomy a fair trial; but the real reasons given for the adoption of sclerotomy in glaucoma are, that the author has found many cases in which the large opening in the iris after iridectomy, interferes seriously with the function of the eye; and that he finds the removal of a segment of the iris to be quite an unnecessary proceeding. He states that, in cases in which the segment of the iris has been incompletely removed, the tension has been reduced as well as in those in which no such failure has occurred; and that when sclerotomy has been performed in the manner in which he describes the operation, the results have been more successful than those after Von Gräfe's operation.

The operation of sclerotomy described by Dr. Mauthner consists in the division of the sclerotic in front of the iris, and he gives the following directions.

Before the operation, a drop of a one per cent. solution of the sulphate of eserine is to be applied, when the pupil will undergo contraction, unless there be atrophy of the iris. If there be atrophy, he remarks that it is exceedingly difficult to avoid prolapse. In adults, the operation should be performed without anæsthetics. The division of the sclerotic should be performed upwards, in case it is necessary to perform iridectomy. On account of accidental prolapse of the iris, this is the most favourable position to do so. A Von Gräfe's cataract-knife is now to be entered a millimetre behind the edge of the cornea, and carried through as if to form a scleral flap by Wecker's method. After transfixion, the operation is completed by causing the knife to cut its way out very slowly, so that the aqueous humour may escape very gradually; it is in this manner that the prolapse of the iris is prevented; the flap is not, however, to be completed, but a small bridge is to be left at its upper part.

The author considers that the essential part of the operation of iridectomy is the division of the sclerotic at the margin of the cornea, and that the success of the operation depends on the extent of the sclerotic divided; he thinks, therefore, that the above operation is more certain than iridectomy, as the extent of the scleral wound is greater.

The knife should not be withdrawn from the eye until just as the last of the aqueous humour has escaped; as it is withdrawn, its flat side is very gently pressed upon the iris. A drop of the solution of eserine is then applied, and the eye is dressed with the usual pad and bandage.

The dressing is to be renewed after a few hours, and another drop of the solution of eserine applied. The patient should be kept in bed for 48 hours.

If the iris prolapse, it may either be returned by

gentle manipulation with a curette, or the operation of iridectomy may be completed. The author recommends the latter proceeding only when the prolapse is considerable, but remarks that even in this case he has seen very good results from its return.

Dr. Mauthner also hopes for good results from the performance of the operation in hydrophthalmus. He records a case in which he performed the operation with apparent success, but the time after the operation, apparently only a few weeks, was not sufficient to enable him to assert that it was successful, except in its immediate results.

**COLSMAN ON NEURITIS MIGRANS AFTER ENUCLEATION.**—In a paper in the *Berliner Klinische Wochenschrift* for March 19, Dr. Colsmann thus designates the occurrence of secondary optic neuritis in the sound eye after the removal of the other eye. He records three cases, of which one only came under his personal observation.

The case treated by the author was a man of 35 years of age. When he first presented himself, he had a central perforation of the lens-capsule and cornea from the entrance of a foreign body; keratitis supervened, with great pain and swelling of the tissues of the orbit. The patient, however, would not consent to enucleation until six weeks after the accident. A few days after the operation, the sound eye presented a patch of œdema of the conjunctiva occupying about a fourth part of the surface of the bulb; at the same time, the power of vision had fallen to  $\frac{15}{100}$ , although there was absolutely nothing abnormal in the ophthalmoscopic appearance of the fundus. Three days after this, there was distinct haziness of the optic disc and of the surrounding retina, extending towards and involving the yellow spot. The field was very much contracted concentrically, especially from without and above. The author asks if this form of the field does not point to a pressure on the optic nerve, chiefly acting from without and from below; and, therefore, to infiltration of the space between the outer and inner sheath of the optic nerve. Acting on this theory, the treatment consisted of mercurial inunction, a seton in the neck, local blood-letting, and iodide of potassium internally. In ten weeks, the field of vision was normal, and the patient saw  $\frac{15}{100}$ , and, at the end of six months, he had completely recovered.

The other two cases are given with less detail, but are very similar in every respect, except that one of them was lost sight of at an early stage of the neuritis.

The author believes that, in these cases, the inflammatory process is propagated through the connective tissue of the space between the outer and inner sheaths of the optic nerve to the chiasma, and so to the sound eye. In support of this view, he quotes a number of facts, especially referring to the pathological processes which are known to occur in the lymph space of the optic nerve. Thus, Michel describes a new formation in the sheath of the optic nerve of a boy who had been blind from atrophy for some years before his death; Leber, one in which the tissue of the lymph space was hypertrophied; Manz, one of dropsy of the sheath; and Krohn, a case of double neuritis, in which the sheaths of both optic nerves were infiltrated with carcinomatous deposit secondary on ovarian cancer.

Lastly, he refers to Klemm's investigations, which show that inflammation of a nerve-trunk of one side may extend to the corresponding nerve-trunk of the opposite side of the body, either with or without im-



plication of the corresponding segment of the cord and its membranes. Dr. Colsman quotes a case of double sciatica, without any spinal symptoms, as a case in point.

SCHMIDT-RIMPLER ON THE REFRACTION OF THE EYE.—Schmidt-Rimpler, in the *Berliner Klinische Wochenschrift*, 1877, Nos. 4 and 5, gives a new method of determining the refraction of the eye by the ophthalmoscope. He uses the inverted image, and determines its place by having a small object in front of the lamp; a series of bars on a star. When the shadow of this image and the fundus of the eye are seen distinctly at the same time, it is evident, that they both lie at the same distance from the eye of the observer. As the distance of the shadow from the mirror of the ophthalmoscope is known, the refraction of the patient's eye is easily calculated by the following formula,  $\frac{1}{F} = \frac{1}{B} + \frac{1}{A}$  where F is the focus of the lens employed in producing the inverted image; B is the distance of this lens from the place of the image of the shadow; and A the distance of the real myopia, or the virtual hypermetropia. Neither the accommodation nor the refraction of the observer affect this method, which is entirely independent of the condition of his eye. The image of the flame of the lamp may be used instead of the shadow, except when great accuracy is required.

B. THOMPSON LOWNE.

WALB ON TUBERCULOSIS OF THE EYE.—Dr. Walb of Bonn gives, in the *Klinische Monatsblätter für Augenheilkunde* for August, a communication on the above subject. After relating a case which has been under his care since his former paper on the subject in August 1875, he gives a slight *résumé* of the observations of other continental surgeons on the same affection, and sums up shortly as follows.

1. Every portion of the eye which contains vascular connective tissue is in a position to become tuberculous.
2. The eye may be the primary seat of the affection, no tuberculous degeneration being present in other organs, or it may be affected simultaneously with other organs.
3. The eye may be the seat of a secondary tuberculous in the form of miliary tubercle.
4. This develops either as part of a widely spread miliary tuberculosis, and then it seems to occur only at the choroid; or it arises when, in another part of the eye, simultaneous primary tuberculosis is present. For example, secondary disseminated miliary tubercle may be seen in the ciliary body when a primary tubercular deposit is present on the iris.
5. Primary tuberculosis of the eye can induce secondary affections of the other organs.

LÖWENBERG ON GASEOUS INTERCHANGE IN THE TYMPANIC CAVITY.—In a reprint from the *Transactions of the International Otological Congress*, Dr. N. Löwenberg of Paris gives some novel ideas on the above subject. Reasoning on what takes place in the lung—though he points out that the cases are not perfectly analogous, as air meets in the tympanum blood of every description equally, but with greater difficulty than in the lung, on account of the denser covering of the vessels, and air is less frequently received in the tympanum—he holds that, in the tympanum, the oxygen of the air disappears, and is compensated only to a certain

extent by carbonic acid. "The consequence is a defect in the remaining total sum of gas, and this diminution accounts for the sinking inward of the drumhead, etc.," when the Eustachian tube becomes closed from any cause. To obviate this "deperdition," in case of obstructed Eustachian tube, he thinks the substitution of other gas less subject to diminution by "quasi-respiration" than the commonly used atmospheric air, for the purpose of inflating the tympanum, will be more successful, and this he believes expired air will do. He causes the patient to fill for himself from his own lungs a bag of India-rubber or a bladder, and from this he inflates the tympanum. The results have been good. The improvement was more durable than with common air, and "the feeling of agreeable fullness which followed the air-douche was more distinct than otherwise".

Dr. Löwenberg has used recently prepared hydrogen in the same way, and the results were similar to those produced by respired air.

W. LAIDLAW PURVES.

## PSYCHOLOGY.

NASSE ON THE DELUSIONAL INSANITY ("VERFOLGUNGSWAHNSINN") OF DRUNKARDS.—This paper occurs in the second part of the *Allgemeine Zeitschrift für Psychiatrie* for the present year. Dr. Nasse states that in the Rhine province the percentage of cases of insanity which may be ascribed to the abuse of alcohol has remained almost the same for the last 30 or 40 years. During the last three years, the author finds that, among male patients, 27.7 per cent. of the fresh cases admitted to the Andernach Asylum may fairly be considered as due to drunkenness, while among the females the percentage is 1.63. The 160 cases (admitted during the last three years) each of which Nasse looks upon as having been chiefly, if not solely, caused by drink, are described as follows: melancholia, 42; mania, 54; dementia, 16; general paralysis of the insane, 20; the remaining 28 were cases of delusional insanity. It is this last group of cases which forms the subject of the paper. Dr. Nasse says that the only description of these cases with which he is acquainted is contained in Marcel's paper on "La Folie causée par l'Abus des Boissons Alcoôliques", Paris, 1847. The account there given of them differs somewhat from the author's, which is shortly as follows. There is a form of insanity characterised by certain fixed groups of ideas which have no foundation in fact, but which influence the actions and emotions. The patient reasons rightly from false premises, the delusions change only very gradually, the depression which is often noticed at first steadily disappears before a growing overestimation of self. This form of insanity admits of partial and rarely of entire recovery; but mostly ends in hopeless mental weakness.

Several cases are given; they illustrate a form of mental disease which greatly affects the intellectual and emotional life. Delusions of persecution are constant, and mostly have reference to the immediate surroundings of the patient; in the case of married men they are generally directed against their wives, whom they imagine to be unfaithful. Various hallucinations, especially of hearing and sight, are common. An exalted idea of self is generally observed; it varies from the mere belief of the patient that he is highly talented, etc., up to a delusion that he is some great personage; it gradually obtains the upper hand

over the depression which is at first produced by the hallucinations and delusions of persecution, and is accompanied by religious exaltation. The most noticeable among the physical changes, are the constant symptoms of paralysis of the facial muscles and atheroma of the vessels.

In none of the 28 cases observed were the delusions of persecutions with hallucinations absent. The greatest variations occurred in the delusions of jealousy mentioned above. Of 17 married patients, 15 were the subjects of the delusion that their spouses were unfaithful; the two patients in whom this delusion was absent had not previously lived happily with their wives. Of three widowers, one accused his deceased wife of unfaithfulness, and she repeatedly appeared to him in the company of other men; the other two imagined they were visited daily by persons of the other sex. The eight unmarried patients believed they were persecuted by their nearest relations, and one of them believed that a faithless lover exercised an evil influence over him.

As to the delusions arising from the exalted idea of self, and which mostly took a religious turn, in 19 cases the delusion of being in direct communication with God, of being specially called by Him (Son of God, Prophet, Judge of the World, etc.), was present. Only in six cases were anxiety and depression the chief characteristic, although they have been described by other authors (Marcel, Thomeuf, Mag-nan, etc.) as always present.

The hallucinations also form a distinctive feature in these cases. It is generally believed that, as in delirium tremens, so also in the true insanity of drunkards, hallucinations of sight are the most common; but Nasse maintains that, at any rate in the class of cases under description, hallucinations of hearing are the most frequent and prominent. In only three of his cases did he fail to discover them; whereas, the hallucinations of sight were only observed in 18 of the cases, and were neither so marked nor so enduring as those of hearing. Disturbances of sensation, consisting of burning and pricking of the skin, unpleasant sensation in the abdomen and genitals, etc., were only noted in 10 cases; nor did the patients attach so much importance to them as to the affections of sight and hearing. Hallucinations of smell were present in three, those of taste in only two, cases; for the common delusion of poison in the food does not imply an hallucination of taste.

The paralytic symptoms, viz., trembling of the limbs, tongue, and facial muscles, difficulty of speech, twitchings, formication and anæsthesia of the limbs, etc., which are generally considered to be characteristic of chronic alcoholism, were not very generally present; the trembling of the limbs and difficulty of speech were only seen in a few cases, but twitching of the muscles of the face, and trembling of the tongue, were more frequent. If to the above cases be added 13, in which one half of the face was more flabby than the other, and in which inequality of the pupils was noticed, the statement will be justified that a motor affection of the muscles of the face constantly accompanies the psychic symptoms. Giddiness and epilepsy, which otherwise so frequently accompany alcoholism, were not observed.

Atheroma of the arteries was diagnosed in 16 cases, and heart-disease in 12; a systolic murmur at the apex, with or without increase of the præcordial dulness, was the most frequent sign of the latter; other bodily disease was rarely noted.

The course of the disease is mostly chronic, but its commencement generally sudden. In only one

case had the patient previously been attacked by delirium tremens. Hallucinations and anxiety were generally present from the very first, and the case underwent no further change except the above-described general transition from depression to exaltation of manner. The memory usually remained good with regard to events which had happened before the illness commenced, but often failed as to circumstances occurring at the beginning or during the course of the affection. This has been also observed by Brierre de Boismont. The prognosis is very unfavourable; out of the 28 cases not one recovered, but six were discharged improved; whereas cases of mania and melancholia caused by drink yield a good percentage of recoveries; thus, out of 54 cases of mania due to this cause, 28 recovered and 18 improved (altogether 85 per cent.); and, of 42 cases of melancholia, 10 recovered and 14 improved, i. e., 57 per cent. in all.

The author is unable to give the results of any *post mortem* examinations in these cases, but draws attention to the atheroma of the vessels and disease of the heart as a sufficient cause of the defective nutrition of the cerebro-spinal nervous system which may fairly be presumed to exist.

**BÖTTGER ON REMISSIONS IN THE COURSE OF GENERAL PARALYSIS.**—In a paper read at Berlin, and reported in the second part of the *Allgemeine Zeitschrift für Psychiatrie* for this year, Dr. Böttger distinguishes three kinds of remissions as occurring in the course of general paralysis of the insane, and relates cases as examples of each. The three forms of remission are as follows: 1. Cases in which the motor symptoms disappear, but the mental weakness remains; 2. Those in which mental improvement takes place, though the paralysis (hesitation of speech, tabic gait, etc.) persists; and 3. The rarer instances in which both mental and motor symptoms disappear together, so that only the most careful examination can detect that the patient has not perfectly recovered.

Remissions must be regarded as exceptional in general paralysis; the author observed them in 25 out of 70 cases. In order to their occurrence, the patient must almost always be in an early stage of the disease, though some noteworthy exceptions have been recorded. Remissions are most common during the first stage, when symptoms of motor paralysis have not generally appeared, and the improvement usually commences within the first few months of the patient's stay in an asylum: this is believed to be due to the beneficial effect of the quiet and regularity of asylum life on the congestive condition which characterises the prodromal stage of paralytic dementia.

In all cases of improvement or apparent recovery from the disease, close examination reveals a remaining weakness of intellect; this is seen in the shallowness and instability of mental impressions, frequent changes between cheerfulness and depression without adequate cause, marked alteration in the patient's original character. Sometimes the patient shows a disposition to unmitigated, and perhaps purposeless, lying. In this stage of the disease, too, the patient is very easily worked upon by outward influences, whether good or bad—an important circumstance from a medico-legal point of view. Another characteristic of the stage of remission is the patient's want of appreciation of his condition; he never shows the satisfaction which is seen in the convalescent from physical disease, nor gratitude



and attachment to those who have had the care of him; a shyness and disinclination to speak of the past always remain. Simon has already noted as a characteristic of this stage the tendency of the patient to withdraw himself from all medical examination, whether mental or physical.

As a rule, after a remission, the renewed progress of the disease is ushered in by an epileptiform or apoplectiform seizure, which is not unfrequently rapidly followed by death, though more often the well known clinical symptoms of the disease are fully developed, and the patient passes through its various stages.

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## REPORTS OF FOREIGN SOCIETIES.

### SIXTH CONGRESS OF THE SOCIETY OF GERMAN SURGEONS.

April 6. *Gastrostomy*.—Dr. Trendelenburg, in opening a discussion on Dr. Schönborn's paper (see *London Medical Record* for August, page 338), said that he had lately performed gastrostomy on a boy aged 8, who had stricture of the œsophagus in consequence of having swallowed sulphuric acid in July of last year. Deglutition even of fluids had at last become impossible. He could not as yet say much about the result, except that the operation had done no harm, and that the object of forming a gastric fistula had been attained. He had not used the apparatus for finding the stomach, described by Dr. Schönborn, because it was impossible, and, moreover, he did not think that it was so difficult to find the stomach as had been stated. Sometimes, indeed, the viscus was not at once seen when an opening was made in the abdomen; but on drawing the omentum a little outward the gastro-epiploic artery and vein came into view, and at the same time the greater curvature of the stomach was found. He used silken sutures, applying them around an opening of the size of a German mark. A cannula was introduced to keep the opening patent. Verneuil fed his patient on the first day, but he (Dr. Trendelenburg) did not give food until the day after the operation, so as to allow adhesion to take place between the abdominal wall and the edge of the opening in the stomach. Since the operation the child had gained strength; there had been almost no trace of peritonitis, and no fever. Dr. Trendelenburg had endeavoured to dilate the strictured œsophagus by operating through the stomach, and hoped to succeed, as the stricture was low down. Once or twice the patient had been able to swallow some soup; this showed that the passage into the stomach had already become somewhat more free.—Dr. E. Küster said that Dr. Schönborn's narrative gave him encouragement after the unfortunate result of an operation which he performed two years ago on a man nearly 60 years old, who had so severe a stricture of the œsophagus that he could only now and then swallow drops. There was no difficulty in the operation nor any constitutional reaction, but the patient died at the end of a fortnight, nutrition being quite impossible. During the whole time he had not a single stool, and at the necropsy the whole anus (rectum?) was found filled with hardened fæces. He had been reminded by this of Magendie's statement, that animals in which gastric fistulæ were made died as soon as if they had

been starved, although fed with their usual food. This statement was now contradicted by the observations of Verneuil and Schönborn. Nutrition had been very much reduced in Verneuil's case, and it must be assumed that in young individuals this impairment of nutrition was comparatively more easily recovered from than in the old, in whom, indeed, such recovery was impossible. He therefore believed that the formation of a gastric fistula was not to be recommended in persons above 50 years of age, while the operation might be practised in young individuals, especially when, as in Trendelenburg's case, there was a possibility of dilating the stricture through the stomach. For the purpose of introducing food through the opening, he had used an instrument resembling a tracheal cannula, with a circular shield. It was passed into the opening when the individual was to be fed, and then removed.—Dr. Billroth had had a case which resembled those under discussion, so far as it was one of stricture that could only be reached through the abdominal wall. The case was one of sarcoma, lying behind the bladder, and compressing both ureters in such a way as to prevent any urine from entering the bladder. Dr. Billroth removed the tumour, and the flow of urine became free. Three days after the operation, however, a loop of intestine protruded through the wound while the patient was straining at stool, and death occurred from peritonitis. In a case of cancer he had endeavoured to remove the disease by the spoon, after performing œsophagotomy. The result, however, was not encouraging. His observations had led him to believe that gastrostomy might be performed much more frequently than was possible with the present methods of operating. Two of his assistants had made experiments by excising the stomach of a dog; notwithstanding this, the animal increased in weight. He believed that resection of the stomach would at some time be performed; and especially when a fistulous opening could be made without danger, would it be possible by introducing the hand to ascertain the extent of a cancer in the stomach.—Dr. Schede had within the last year operated on two cases of stricture of the pylorus, both the result of swallowing sulphuric acid for the purpose of suicide. In the first case he made a fistulous opening, and excised the cicatricial tissue forming the stricture. The patient died of hæmorrhage. In the second case there was stricture both of the œsophagus and of the pylorus; the patient could swallow fluids, but they did not pass beyond the stomach, which was enormously distended. Dr. Schede made an incision, and endeavoured to dilate the strictured pylorus, but the patient survived only two days.—Dr. Hahn had last year operated on a boy 6 years old, who about a year and a half previously had swallowed a large quantity of potash-lye. Stricture of the œsophagus was the result, which increased so much that he was unable to swallow fluids. All attempts to introduce a bougie had failed. The child was brought to him in a very miserable, emaciated condition. He endeavoured first to pass an ordinary urethral bougie. This failing, he used the purest fish-bone bougies, which he had found very useful. With such instruments, having a diameter of one or two millimetres (0.04 or 0.08 inch) he succeeded in passing the stricture, and during more than half a year he had introduced his bougies several times a week, gradually increasing the size. The child could now swallow fluid easily, and even potato-soup, and was very well nourished. He related this case because

he believed that strictures produced by swallowing corrosives, such as sulphuric acid and potash-lye, could often be dilated in this way. In his case there were two strictures—one where the œsophagus was crossed by the left bronchus, and another close above the cardiac orifice. He believed that the patient was out of danger, and that probably the necessity of gastrostomy might be obviated.

*April 7. Retropharyngeal Tumours.*—Dr. Busch, of Bonn, showed several retropharyngeal tumours. One of them was a lipoma of the size of a fist; it completely filled the pharyngeal cavity, and extended so far into the mouth that it appeared scarcely possible to understand how the air and food found their way into the trachea and œsophagus. These tumours were rather frequently met with in Bonn. They were situated in the retrovisceral connective tissue, and were lymphomata, fibromata, sarcomata, and rarely lipomata. They encroached on the pharynx and thrust aside the carotid arteries, but were generally encapsuled, and easily removed. Their removal was, however, rendered difficult by the previous employment of electrolysis, the galvanic cautery, &c., which led to the destruction of the capsular limitation and to cicatricial indurations between the sheath of the carotid, the bucco-pharyngeal fascia, and the surface of the tumour, rendering the separation of the latter from the carotid a difficult and dangerous proceeding.

*Antiseptic Dressing.*—Dr. Busch showed a plaster cast of a hand which had been severely burnt, and which healed rapidly only when antiseptic dressing was applied.

*Fungus of Dura Mater: Removal: Death from Air in Veins.*—Dr. Genzmer related the case of a woman aged 63, who was admitted into hospital at Halle with a tumour, which had existed two years, at the posterior part of the sagittal suture. It was diagnosed to be a perforating tumour of the dura mater. During the first four weeks of her stay in hospital the tumour increased in size; she had bad attacks of giddiness and numbness of the right arm. Dr. Volkmann removed the tumour. It was almost as large as a fist, and in order to expose it the opening in the skull had to be enlarged. After the separation of the tumour from its connections with the dura mater and falx cerebri, and while the hæmorrhage was being arrested as rapidly as possible, a gurgling sound indicating the entry of air into the veins was heard. At the same moment the patient became collapsed, and soon died, without recovering consciousness. At the necropsy, air was found in the right heart and in the pulmonary vessels, the blood in which was distinctly, though not excessively, reduced in quantity. The brain was uninjured; between the posterior lobes was a large cavity, in which the tumour had lain. Along with it a piece of the superior longitudinal sinus, several inches long, had been removed. Microscopical examination of the tumour showed that it was a spindle-celled sarcoma with small cells. In order to prove the possibility of the entrance of air into the heart through a cranial sinus, Dr. Genzmer made some experiments on dogs. The animals having been narcotised, the skull was opened with a chisel, and the superior longitudinal sinus divided at its posterior end. In six of the animals air entered the right heart; they died after an average time of eighteen minutes. In three animals, which died after an average time of forty-five minutes, the heart was void of air, and there was thrombosis of the central end of the sinus.

*Gunshot Wound of the Tongue: Tracheotomy: Ligature of Carotid: Death.*—Dr. Geissel, of Essen, related the case of a lad aged 16, who was wounded in the mouth by the explosion of a cartridge hidden in a walking-stick. The right half of the tongue was lacerated and much swollen; there was moderate hæmorrhage. He was sent into hospital at 3 p.m., and was ordered rest, iced dressings, and ice to suck. Towards the evening there was hæmorrhage, to arrest which charpie dipped in perchloride of iron was used. When Dr. Geissel saw him at 8 p.m. he was much collapsed; tracheal râle was commencing. A short time before he had with difficulty expectorated a clot of blood, which was a complete cast of the trachea. Crico-tracheotomy was performed. The dyspnoea was relieved, but the hæmorrhage continued, and was only arrested by ligature of the right common carotid. Death occurred twenty-four hours later from œdema of the lungs. At the *post mortem* examination, commencing pneumonia of the middle lobe of the right lung was found. The right half of the tongue was completely torn away. The bleeding had taken place from the right lingual artery.

*Wound of the Neck.*—Dr. Geissel also mentioned the case of a man who had been stabbed in the neck with a dagger, which entered on the left near the splenius capitis and splenius colli, and came out at the level of the trachea, near the omohyoid muscle. There was much hæmorrhage, probably from the ascending cricoid or superior thyroid artery. Ligatures were applied, and rest and iced applications were ordered. A traumatic aneurism appeared on the second day. He was still under treatment. The interest of the case lay in its complication with paralysis of the sympathetic, especially the oculopupillary fibres. There was contraction of the left pupil and left eyelid, with retraction of the globe of the eye into the orbit. Dr. Geissel had not noticed any vaso-motor phenomena, but these might be overlooked.

*Sudden Death in Case of Bronchocele.*—Dr. Rose, of Zürich, read a paper on this subject, in which he attributed death to the changes produced in the trachea. The tumours produced curvature of the trachea, and consequent narrowing. This effect was not always in proportion to the size of the swelling; with very large bronchoceles the trachea might be scarcely curved, while with small ones it might almost be bent at an angle. The curvature of the trachea caused narrowing of its lumen, consequent on which were impeded inspiration, venous congestion of the tracheal and bronchial mucous membranes, dilatation of the right auricle and ventricle, hyperæmia of the lungs leading to inflammatory disturbances, and increased difficulty of respiration. That these, however, were not the ultimate cause of sudden death, was shown by its occurrence when the tumour had been removed. It was always due to asphyxia from stenosis of the trachea, the lumen of which was obliterated by its angular curvature. This curvature was facilitated by the softening of the cartilages which almost always accompanied bronchocele. In the subjects of bronchocele, even slight changes in the position of the head and neck affected the trachea, and if chloroform were given, and vomiting, etc., took place, the danger was increased. It was, indeed, an old observation that persons affected with bronchocele bore chloroform ill, and its employment in such cases had several times been followed by death. In a case in which Dr. Rose was removing a small atheroma from the skin of the head,



the patient had a small bronchocele, and died after the first few inhalations of chloroform. On *post mortem* examination, moderate lateral flexure was found, but there was much softening of the cartilages.

*Incomplete Fractures of the Femur.*—Dr. König, of Göttingen, after some observations on the history of the subject, demonstrated a series of specimens. The first case was one of doubtful fracture of the femur. A lady, aged 75, fell on her hip, then rose, but again sank down, and was carried to bed. All the symptoms of fracture of the neck of the femur were present; she afterwards had paralysis. The specimen was sent to Dr. König, and at first it did not appear to him to indicate fracture of the neck. There was a peculiar approximation of the trochanter to the head of the bone, and the latter, viewed from the front, appeared remarkably pressed downwards. On making a section, he found that there was an incomplete fracture at the union of the neck with the head of the femur. The patient had fallen on the trochanter; this had produced a crack of the neck of the bone. The cortical substance of the head had become pressed on the one hand into the spongy substance of the neck, and on the other into the softened tissue of the head. A second specimen showed the result of pressure on the head of the bone, not from behind and above, but from before and below. There was a distinct cleft passing into the neck of the bone. Dr. König made some further remarks on the difficulties attending the diagnosis of fracture of the neck of the femur.

*The Operative Treatment of False Joint.*—Dr. von Heine, of Prague, said that probably three-fifths or even two-thirds of all the operations for the cure of false joint were successful, no matter what proceeding was followed. This showed that none of the numerous proceedings recommended were absolutely successful. He would speak only of two—Dieffenbach's operation of the introduction of ivory pegs, as modified by Langenbeck; and resection of the part. With regard to the ivory pegs, many surgeons had failed in cases of fracture in which bony union had not yet taken place, and nevertheless in the same cases the subsequent use of the ivory pegs had been successful. In one instance, a case of false joint in a fracture which had occurred nine weeks previously came under his care, and for a whole year he endeavoured, by the repeated introduction of ivory pegs, to procure union. At last inflammation was excited, but, when he believed that the bone was firm, he found that all the labour had been in vain. He again had recourse to the ivory pegs, and at last, with the aid of a jointed plaster of Paris bandage he succeeded in establishing at least partial mobility of the affected limb. In cases of false joint following fracture, resection of the ends of the bones, followed by proper treatment of the wound, was not always successful. The employment of antiseptic dressing increased the difficulty, as it interfered with the production of the inflammation necessary for consolidation. He did not think that the manner in which the operation-wound was made, or the freshening of the ends of the bone, was of much importance. It appeared of little consequence whether one end was cut to the form of a salient and the other to that of a re-entrant angle, or whether they were dovetailed. Dr. von Heine then related some cases in which he had operated. In one case, a pseudarthrosis of the femur had existed ten months. He excised the ends of the bone to the extent of an inch, and some months later repeated the operation, removing an inch and a half

of the upper and an inch of the lower end. A plaster of Paris bandage was then applied, in which was fixed an apparatus by which the ends of the bone were kept in contact. Bony union was the result, and the bandage (which was renewed several times) was finally removed three months after the second operation. The motion of the knee was restored by passive flexion and extension, and the patient was discharged with a limb shortened by four inches. In a second case, a woman aged 30 had periostitis and necrosis. After some time, a portion of the sequestrum was removed by operation. After this, in consequence of a fall into the water, she again had necrosis, and, while confined to bed, she perceived that her leg was shortened. Dr. von Heine performed resection, removing an inch of the lower and an inch and a half of the upper fragment of the broken bone. He also drilled an oblique hole in each end, through which was passed a long ivory peg, the ends of which could be acted on by a screw, so that the bones could be kept in the proper direction. One of the pegs was removed four weeks after the operation, the other somewhat later. As he was removing to Prague, the patient did not remain under his care, but he heard afterwards that the treatment was not carried out, and that recovery did not take place. In a case of pseudarthrosis of the shoulder in a man aged 43, which had lasted twelve years, the man had become able to fix the upper fragment, and to perform all the movements necessary to his occupation with the muscles of the forearm. In this case Dr. von Heine performed resection, and introduced ivory pegs; one of them broke in the wound and could not be removed, and the other was removed at the end of a fortnight. The patient suffered from emphysema, and could not bear the plaster of Paris bandage. A year later the resection was repeated and union was obtained under the use of a clamp which Dr. von Heine had employed some years ago in a similar case. Dr. von Heine referred also to other cases in his practice.—Dr. Volkmann doubted whether antiseptics were chargeable with the failures in cases of resections of false joints.—Dr. Hüter was convinced that the use of ivory pegs in pseudarthrosis conjoined with antiseptic dressing was not to be depended on. He believed that means must be found for exciting, by the use of chemical agents, the desired amount of irritation in order to produce union. Dr. Vogt, of Greifswald, had injected lactic acid into the periosteum and medullary canal of animals. Dr. Hüter had employed this treatment in a case of pseudarthrosis in an old horse, with the result of producing union in six weeks.—Dr. Bidder showed some preparations illustrative of the condition of the tibiæ of rabbits after the introduction of ivory pegs or pieces of bone in the long axis. The results, he believed, showed that in grown animals there was no formation of osseous medullary callus, nor, indeed, the slightest formation of bone when the region of endochondral ossification alone was irritated, there being no osteogenous substance remaining in the medullary canal. In young animals, on the other hand, osseous callus was readily formed under the same circumstances; in these the medulla contained an abundance of osteogenous matter, which disappeared as the child grew older. It was important, therefore, in observations on the repair of bone, to take into account the age of the animal, and the distinction between the periosteal and the endochondral regions of ossification.

*Phosphorus Necrosis.*—The President, Dr. von Langenbeck, opened a discussion on this subject by

showing a photograph sent to him by Dr. Wood, of New York, of a case in which reproduction of the lower jaw had taken place after removal of the bone for phosphorus necrosis. The subject was one which much interested him. He believed that in time excision of the lower jaw for phosphorus necrosis would be discontinued, as the disease itself would cease to exist. Some years ago not a session passed, he believed, in which he had not one or two cases of phosphorus necrosis. He had performed complete excision of the lower jaw for this disease in four cases, but since 1864 he had not done the operation once, in consequence of the absence of the disease through the adoption of improved ventilation. If subperiosteal excision of the whole jaw were performed at one sitting, the chin was drawn back by the muscles, and the form of the new jaw was unsightly. To avoid this, he performed the operation in two stages, removing the second half of the jaw four or six weeks after the first, and the result had been satisfactory.—Dr. Esmarch had for some time doubted whether it was necessary to extirpate the lower jaw in cases of phosphorus necrosis, but the suppuration, fever, and collapse rendered it necessary that something should be done. Another question was whether the necrosed jaw could be removed through the mouth. In a large number of cases this was possible when large sequestra had become separated from the buccal mucous membrane, but it was quite impossible, in cases of necrosis of the entire bone, to remove the jaw through the mouth in two halves, and to preserve the periosteum. He had made several attempts to prevent the deformity following excision of the lower jaw, but without result.—Dr. Hüter had some years ago excised the whole lower jaw of a man in whom the upper jaw-bones had been previously removed for phosphorus necrosis. There was no reproduction of bone, and the man presented a peculiar appearance, having no jaws. Dr. Hüter believed that he was still alive.—Dr. Billroth said that phosphorus necrosis was still met with in Vienna.

*Perineal Hypospadias.*—Dr. Lücke described the case of a young man aged 19, in whom the urethra opened at the posterior border of the scrotum. The penis was short, and lay on the scrotum between the testicles. The glans was completely imperforate, and relatively small. There was also a cleft in the scrotum, so that the penis could not be seen when the patient stood or sat. Above the orifice of the urethra, a membrane extended upwards a short distance on the perinæum, ending in a small sac with a kind of hymen. Dr. Lücke commenced operative proceedings by taking measures for extending the penis, for, if the urine were to be discharged in the most normal situation possible, and especially if the generative power were to be attained, the curvature of the organ must be removed. He therefore cut the penis free until it could lie on the abdominal wall, applied sutures, and bandaged the penis with a splint. The formation of a canal in the glans was successful. Before proceeding further, it was necessary to wait for the result of this stage of the operation. The patient was therefore directed to keep the penis bandaged for some time, so as to stretch the cicatrices. In the meantime, Dr. Lücke learned that Duplay had operated in the same manner, but had failed in the second stage, that of forming a new urethra. He therefore adopted the method followed by Thiersch in a case of epispadias, which was successful. The attempt to unite the natural and artificial portions of the urethra according to Duplay's

plan by direct suture failed, but Dr. Lücke succeeded by cutting rather large flaps and bridging over the interval. A year and a half had passed since the operation, and the organ assumed a straight condition during erection, whereas formerly it was curved. The parts had healed, but the patient constantly used a catheter.—Dr. Esmarch had met with two similar cases, on which he had operated nearly in the same way, the operation in one case being successful.—After a few remarks from the President and Dr. Güterbock, the session closed.

#### ACADEMY OF MEDICINE IN PARIS.

June 12. *Typhoid Fever.*—After having replied to the attacks directed by M. Jaccoud against his work on the etiology of typhoid fever, M. Gueneau de Mussy passed in review the various arguments brought forward by M. Chauffard in favour of living spontaneity, and against the theory of specificity. In the first instance, he could not admit the assimilation of parasitism to specificity. The former is not, properly speaking, a disease. It is, at the utmost, a traumatism. The acarus of scabies is of this character, whilst specific affections are, to a certain extent, temporary constitutional diseases, for the most part acute. Can it be said that the specific principle may not be an organised and living substance? It is not impossible, but M. Gueneau de Mussy had not affirmed it, and in any case, there is nothing in this hypothesis which contradicts the laws of physiology and general pathology. Without doubt, the specific principles present remarkable analogies with grains and ferments, but M. Gueneau de Mussy had not come to any conclusion as to the similarity, much less as to the identity of these agents. He had even pointed out, on several occasions, the exclusive invasion of the domain of pathology by micrococci and bacteria. He was, however, far from regretting, like M. Chauffard, the influence exercised by M. Pasteur on our medical doctrines; in surgery, that influence has originated methods of dressing which constitute a very real advance; and in medicine, it has strengthened the hopes of those who aspire to arrive in the pathogeny of specific diseases at more satisfactory results than are offered to us by dialectics associated with hypotheses. In the same way as M. Pasteur had demonstrated that *pebrine*, similar to a specific constitutional disease in its evolution and its hereditary transmission, has its origin in corpuscles which implant and multiply themselves in the silkworm, may we not hope to discover the agent which produces the diseases now considered as specific and constitutional? Let us remember the history of scabies. In any case, doubt is more scientific and philosophic than dogmatism, for, if it never attains the discovery of the whole truth, it never remains entirely sterile. M. Chauffard does not believe the contagium or virus to be an efficient cause of contagious disease, it is only the occasional cause; it only incites the spontaneity of the organism, which may also be called into action by slight causes. This contagium is not a substance, it is a modality; it is not an agent having an existence of its own, it is a strongly specialised activity. But activity and force are synonymous terms, and the ideas of force and matter are indissolubly united; a modality cannot become a force. M. Gueneau de Mussy thus quoted and criticised the various parts of M. Chauffard's doctrine which are too little in harmony with the data obtained by observation to bring conviction



with them. There is a theory which, whilst admitting the existence of specific principles as causes of contagious diseases, regards as possible their multiplication or generation in another medium than the animal organism. There is nothing in this theory, *à priori*, incompatible with the fundamental principles of biology.

June 19. *Typhoid Fever*.—M. Gueneau de Mussy continued his discourse. If he did not affirm absolutely that contagion is the invariable cause of typhoid fever, notwithstanding the assemblage of facts which tend to that conclusion, it was because he would not go beyond what is rigorously demonstrated. M. Chauffard, on the contrary, whilst accepting the theory of the contagion of typhoid fever, categorically affirmed that it may be referred to another origin. In his *Treatise on Specificity*, he unreservedly admitted that spontaneity might actually, as in the origin of specific diseases, produce these diseases. He now admitted that virulent diseases at a very advanced stage might only transmit themselves by contagion. Why not all virulent diseases? In many cases the existence of contagion cannot, indeed, be demonstrated; but it is the same with small pox, etc. Besides, in these cases, how can it be demonstrated that contagion is impossible, when we know in how many ways the contagion may be transported? M. Chauffard admitted with M. Chauveau, perhaps in contradiction to his former opinions, that the histological elements form the substratum of the virulence. But to escape from the resultant deductions he entrenched himself behind M. Chauveau's authority to affirm that they have nothing in common with the microzymes and the microphytes, that they are identical with the common elements, the products of a simple inflammation. It was of little consequence whether it be to a microzyme, or a ferment, or a simple granulation, that the virulence is attributed. In the second place, it had never been pretended that the specific agents were similar. It had been said that they acted in an analogous manner; and, finally, if our instruments did not permit us to find differences between normal granulations and virulent granulations, M. Chauveau was very careful not to come to a conclusion as to the identity of their nature, and "perhaps one day," he said, "there will be found in the different protoplasms specific characteristics which will differentiate them as well from each other as non-virulent matter". It was much easier to admit these differences even if they cannot be detected by the microscope, as in the cases of curare and the extract of liquorice, than to admit that one and the same commonplace cause will produce several essentially distinct diseases, which, once produced, reproduce themselves without ever being mixed together, without ever exchanging their products, and that indefinitely.

June 26. *Hydrophobia*.—M. Bouley presented for Dr. Couzier, of Baguères, a note on a case of hydrophobia. A woman aged 42, in the eighth month of pregnancy, was bitten in the hand in the early part of February 1877, by a cat in rut which had been shut up for twenty-four hours without food or water. The woman was delivered on March 25, having gone her full time, without any untoward incidents. She soon resumed her usual avocation, though continuing to have a slight sanguineous discharge from the genital organs. Ninety days after she was bitten, the discharge suddenly ceased, and the patient was immediately seized with decided symptoms of hydrophobia, to which she succumbed

in six days. The child, which she had continued to nurse until these symptoms showed themselves, continued in perfect health. Another child, which was bitten at the same time as the mother, had not suffered any ill effects from it.

*Salicylic Acid*.—M. Sée read a memoir on salicylic acid and the salicylates in the treatment of acute rheumatism and cognate disorders, an abstract of which will be found in the LONDON MEDICAL RECORD for August 15, 1877.

July 3. *Neolithic Trephining*.—M. Broca read a note relating to his memoir on neolithic trephining. This operation, which is extremely ancient, must have preceded the knowledge of metals. In various neolithic stations a certain number of crania have been discovered, in which the opening made by trephining has remained. The unvarying nature of the characteristics presented by it proves that the operation was of a methodical kind, and the appearances prove that this operation was effected by scraping, as still practised at the present day in some savage tribes. M. Broca performed trephining on a young dog with a flint scraper obtained from the paleolithic deposit of Ezy; it was easy and quick, and he convinced himself that by no modern proceeding could so much care be taken of the dura mater. He repeated this operation on human bodies; but, whilst it lasted more than an hour in adults, it ended in four or five minutes when performed on the head of a child. The neolithic trephiners performed it on children, for they proposed to treat the convulsive affections common at that age, which they attributed to the impatience of a spirit moving about in the body. The individuals who had been trephined retained the odour of sanctity, and after their death fragments were detached from around the opening through which the spirit had escaped, to serve as amulets. The latter is what is known as posthumous trephining, discovered by Dr. Prunières; the other kind has received the name of surgical trephining.

July 10. *Salicylic Preparations*.—MM. Hérard and Hardy communicated to the Academy the excellent results obtained by them in the treatment of acute articular rheumatism by salicylic preparations. M. Hérard reported six cases of cure and M. Hardy four. These cases formed an additional testimony in favour of the action of this favourite medicine.

*Anthrax and Septicæmia*.—M. Pasteur read in M. Joubert's and his own name a memoir entitled, "Anthrax and Septicæmia." M. Pasteur's researches led him to the conclusion that anthrax may at the present time be called the bacteria disease, as trichinosis is the trichina disease, as scabies is acarus disease. To remove any hypotheses of the simultaneous existence of a virulent material associated with the bacteria in the blood in anthrax, he had been able by careful management to completely separate the bacteria from the microscopic drop of blood which had served him as a starting point, and on the other hand he had found that the blood of anthrax when deprived of the bacteria was harmless. If M. Paul Bert had arrived at other conclusions, it was because in his experiments he thought he had destroyed the bacteria by means of compressed air. This was an error. Besides the multiplication of bacteria by segmentation, there was another method. At some points in their length there was seen to be a production of refractive globular corpuscles, the diameter of which nearly equalled the thickness of the bacteria, and their appearance was followed by rapid absorption of the rest of the rod. These

shining corpuscles, which were germs capable of reproducing filiform bacteria, resisted the agents which destroyed the bacteria themselves. The study of the other physiological properties of the bacteria was also important, from the consequences which arose from them. The bacterium of anthrax was *aerobic*, that is to say, in order to live and multiply it must absorb oxygen and exhale carbonic acid. Hence, if it succeeded in penetrating into the blood and multiplying itself there, it brought on asphyxia by removing the oxygen from the blood-corpuscles. *Per contra*, if the bacterium found itself in the company of other aerobic organisms as greedy of air as itself, a struggle for existence resulted in which the bacterium could not gain the victory. This explained why birds, for instance, never got anthrax; notwithstanding injections into their veins of blood loaded with the bacteria of this disease, the red corpuscles took possession of the whole of the oxygen, and the bacteria soon disappeared as if suffocated. To diminish the virulence of the fluid holding the bacteria of anthrax in suspension, it was sufficient to place common bacteria in it, and this fact, perhaps, might sanction some hopes in a therapeutic point of view. Scarcely had Dr. Davaine, in 1863, announced to the Academy that bacteria were constantly present in the blood in anthrax when his conclusions were contradicted by MM. Taillard and Leplat. These writers said, in fact, that rabbits which had been inoculated with blood procured from animals which had died of anthrax, had perished without showing any bacteria. The development of bacteria could only occur under great difficulty in company with other microscopic organisms, aerobic or anaerobic, and in the case in question the process of putrefaction had deprived the bacteria of the oxygen needed for their existence. The rabbits died, not from anthrax but from putridity, from septicæmia. M. Paul Bert, having proved that this same liquid deprived of bacteria retained its virulence after having been submitted to compression by oxygen, had decided on virulence without organisms. Might it not, however, be admitted that what was considered to be the septic virus was an organised microscopic being, having the power of transforming itself into shining corpuscles, which oxygen at high pressure could not destroy? The septic vibrio might thus present itself, like the bacteria, under two different forms. As to the appearance of the septic vibrio, M. Pasteur alleged that it was nothing else but one of the vibriones of putrefaction, and that its germ should partially exist everywhere; and consequently in the substances of the intestinal canal, for putrefaction invaded the animal through the deep parts. Septicæmia, or putrefaction, in the living subject would not be a single disease. So many vibriones, so many different septicæmias, mild or malignant, was what M. Pasteur proposed to demonstrate in a later communication. In terminating the present one, he protested against the theory of spontaneity in the genesis of disease.

July 21. *Salicylic Medication*.—Three fresh communications on the subject of salicylic medication were presented. The first was by M. Oulmont, and related particularly to the antipyretic action of the new medicine. This action had been contested by M. Sée as regards typhoid fever, whilst it was in this disease that M. Oulmont had obtained the most remarkable results. Unfortunately, in consequence of the rapid elimination of the salicylates, this property does not seem likely to be durable, and it is necessary to have speedy recourse to fresh doses until the animal economy, in some sort saturated by the

salicylate, keeps up a persistent defervescence. Nevertheless, it is still an advantage to have the power of rapidly diminishing the intensity of the febrile movement as well as the agitations which accompany it, and there are cases in which the life of the patient depends on the promptness of the medical intervention.—M. Gueneau de Mussy had also employed salicylic acid in typhoid fever, not as a febrifuge but as an antiseptic. He had administered it in doses of from 1 to 2 grammes, dissolved in 1 or 2 glasses of lemonade, by the aid of from 10 to 20 grammes of brandy, and this plan has proved very successful. Already an equally good result had been obtained in the case of a patient suffering from cystitis, and probably from pyelitis, whose sanious and purulent urine exhaled an extremely foetid odour. Finally, as an external application, this antiseptic action is as efficacious as it is prompt. Dressings, made with a solution of from 1 to 2 grammes of salicylic acid in 400 grammes of water, to which from 10 to 20 grammes of alcohol are added, rapidly improved the condition of gangrenous wounds in typhoid patients. When the wound was too anfractuous and too torpid, treatment was commenced by painting it with tincture of iodine. M. Gueneau de Mussy had also employed salicylate of soda in acute articular rheumatism. If he had not met with the effects noted by his colleagues, nor such frequent relapses, it was because, mistrusting disturbing agents in a constitutional disease of which the tendency is to reproduce itself and to multiply its foci of attack, dreading, above all, rheumatismal effusion on the brain, he had only employed medium doses kept up for a longer time. He remembered that, before the use of sulphate of quinine in rheumatism there was no question of cerebral rheumatism. The physiological effects of salicylic acid, too, were not without analogy to those of sulphate of quinine. He believed with M. Sée that salicylic acid acts powerfully on the nervous system, and that the latter plays a more important part in rheumatism than M. Bouillaud seems to admit. As to gout, M. Gueneau de Mussy was very little in favour of those drugs which cut the attacks short and suddenly arrest the evolution of the disease. Like Sydenham, Trousseau, and Chomel, he endeavours to moderate the pains, to calm the nervous excitement, but not to suppress the attack, so long, at least, as it is not recognised that the salicylate does not rest at stopping the arthritic manifestation but attacks the principle itself of the disease.—Finally M. Jaccoud gave the result of his experience. His communication was based on 21 cases, which he studies from the view-points of complications, relapses, the duration of the treatment, and the termination. His conclusions differed but little from those of M. Sée in what related to acute articular rheumatism, but the little success he had had in chronic rheumatism obliged him to own that a wise and prudent reserve would be more timely even in the interest of the remedy, than an absolute declaration affirming both the constancy and the rapidity of success.

#### ACADEMY OF SCIENCES OF PARIS.

May 28. *Glycogenic Function of the Liver*.—M. Claude Bernard communicated some experiments in support of his doctrine of the glycogenic function of the liver. He demonstrated that the liver performs this function during life, and retains it some time after death. The presence of glucose in that organ



cannot, therefore, be attributed to cadaveric decomposition.

*Red Corpuscles of the Blood.*—M. Q. Hayem read a note on the nature and significance of the small red blood-corpuscles. He concluded from his researches that the dwarf corpuscles (*globules nains*) characterise blood in process of evolution or repair. These elements are not, as it might be supposed, corpuscles in process of atrophy, but, on the contrary, young corpuscles incompletely developed. They only differ from adult corpuscles by their smallness, and the facility with which some amongst them take the spherical form when they have left the vessels.

*The Heart.*—M. H. Franck read a memoir on the change in the size of and in the flow from the heart. Direct measurements had enabled him to determine, experimentally, the proportion between the systolic diminution of the volume of the heart and its discharge. This fact being established, he had examined the variations of the flow from the heart in different circumstances; thus section of the pneumogastrics, by accelerating the beats, augments the arterial tension, because each systole of the heart preserves its normal discharge; on the contrary, excitation of the accelerator nerves of the heart does not modify the arterial pressure, because each systole discharges less than before the excitement. The writer likewise indicated different plans for noting the changes in the volume of the heart in the human subject.

*The Uterus.*—M. Courty read a memoir on the histological changes of the uterus, in their relations with the principal diseases of that organ. His researches indicated a considerable vitality in the tissues of which the uterus is composed, and an almost constant oscillation between hypertrophy and atrophy.

June 4. *Carbonic Acid.*—MM. Mathieu and Urbain communicated fresh experiments, showing, contrary to M. Frédéricq's assertion, that the blood has affinity for carbonic acid as well as for oxygen.

*Cartilage.*—A memoir by M. H. Peyraud contained experimental studies on the regeneration of the cartilaginous and osseous tissues. He has determined that the perichondrium forms cartilage, as the periosteum forms bone.

*Virus.*—M. C. Davaine addressed a note on the subject of M. Bert's experiments on viruses. He declared that viruses submitted to a high pressure of oxygen have not retained their specific properties, the infection produced in these cases is only septicæmia.—M. Feltz read a note in which he endeavoured to establish by experiments that there are no liquid or solid viruses in toxic putrified blood beyond organised ferments.

June 11. *Electric Probe.*—M. Trouvé presented a new electric probe, intended to show the place in which projectiles are lodged in gunshot wounds. The modification made in his first apparatus consists in the disposition of the different parts; the probe becomes an accessory part, and the indicator is constituted by the needle of the electro-medical apparatus.

*Red Corpuscles.*—M. L. Perier presented a note on the variations of the diameter of the red corpuscles in the human species, from a medico-legal point of view. The diameter of the red corpuscles may vary from 31 to 103 ten-thousandths of a millimètre, but in general, the variation only amounts to between 87 and 50 ten-thousandths. The largest proportion of corpuscles shows 75 ten-thousandths of a millimètre, then come those of 87, then those of 50.

*Vision.*—M. J. Pierre presented a note on a mo-

mentary affection of the sight. During convalescence from a brain-fever, he observed that reading caused him to see the characters farther off than the paper. It seemed to him that they were engraved with a hollow of about 4 millimètres, and as the book was bound and pressed, there could not have been any depression resulting from the printing. This anomalous state of the vision gradually became weaker, and ceased at the end of ten days.

*Tetrachloride of Carbon.*—M. Charles Morel presented the results of experiments made by him on tetrachloride of carbon. The composition of this substance being analogous to that of chloroform, he was desirous of seeing if it would not serve for anæsthetic purposes. The experiments show that it is a more powerful anæsthetic than chloroform, and that its action is easily regulated.

June 25. *Gastric Juice.*—M. Charles Richet presented a note on the free acids of the gastric juice. He drew the following conclusions from his experiments. 1. The study of the gastric juice by agitation with ether and the titration of the two acidities, gives the proximate relation between the organic acids (lactic and its analogues) and acids insoluble in ether (mineral acids and their analogues). 2. Pure gastric juice contains little else besides mineral or analogous acids. When left to itself it ferments, and the proportion of organic acids analogous to lactic acid increases. 3. Food mixed with the gastric juice may, by artificial digestion, independently of all direct vital action and of the gastric secretion, increase the acidity of the liquids contained in the stomach by 20.5 and even by 70 per cent. 4. The gastric juice mixed with alimentary substances always contains organic acids analogous to lactic acid, but the mineral acid remains predominant so long as there is no putrefaction. 5. The ferment which turns the alimentary substances acid seems to be partly retained with the solid matters which cannot be filtered, and to pass away partly with the dissolved matters.

July 2. *Deafness.*—M. Bonnafont communicated a paper on trephining the membrana tympani, performed successfully on a case of long-standing deafness which had resisted all treatment. The conclusion of this paper was, that trephining the membrana tympani may cure or ameliorate all cases of deafness in which there is no weakening of the auditory nerve, even when all other treatment has failed.

July 9. *Septicæmia.*—M. Pasteur read a note stating that the corpuscle germs of the anthracoid bacteria (shining corpuscles, cysts, and spores) retain their vitality in absolute alcohol, and also in oxygen at a high pressure, and, on the other hand, that these results apply equally to the corpuscle germs of the vibrio which brings on septicæmia. Of this vibrio he would describe the presence and effects at the next meeting, in a note which he would read in his own name and that of M. Joubert.

*Carbonic Acid.*—M. Frédéricq replied to the criticisms of MM. Mathieu and Urbain concerning his method for the estimation of carbonic acid in the serum of blood. This process, which was objected to as taking into account the carbonic acid present in the state of carbonate of soda, was none the less exact for this, because the carbonates are decomposed in the combustions of the organism.

*Preparations of Copper.*—MM. Feltz and Ritter communicated the results of their experiments on preparations of copper introduced into the stomach and blood. 1. Insoluble albuminate of copper, even

when ingested in considerable quantity, has scarcely any effect on the organism. 2. Soluble albuminate of copper in the stomach brings on as serious symptoms as the ammoniacal sulphate dissolved in distilled water. 3. Sulphate of copper dissolved in syrup of glycerine is much more poisonous than the same salt dissolved in the watery preparation of glycerine. 4. A solution of albuminate of iron in the proportion of 0.15 milligramme of copper to the cubic centimetre injected into the blood brings on death so soon as the dose introduced exceeds 0.15 milligramme to the kilogramme of the weight of the animal. 5. A salt of copper injected into the stomach only becomes poisonous when the system has been able to absorb the specified dose into the blood. 6. The principal eliminatory passages for the copper seem to be, in order of importance, the intestines, the liver, and the kidneys.

*On the External Use of Salicylic Acid.*—M. A. Grellot praised the effects of a solution of salicylic acid as an injection in cases of lochia or of foetid leucorrhœa. He did not indicate the doses employed.

*On the Advantages of Immediate and Speedy Trephining.*—In support of the principles which M. Sédillot had expressed before the Academy, M. Gross forwarded a case of fracture of the skull, complicated with splinters driven into the cerebral substance, and cured by the extraction of the foreign bodies performed the very day the patient was received into the hospital. The successful results, M. Gross added, are in proportion to the promptitude of the operation; and he did not hesitate to affirm the propriety and the necessity of direct exploration, which alone can afford protection from errors compromising equally humanity and science.

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## REVIEWS.

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*Die Seitlichen Rückgrats-Verkrümmungen.* Von Dr. M. Eulenburg. Berlin. 1876.

The author of this monograph has, from long service as director of the Orthopædic Institute of Berlin, obtained much experience in his branch of surgical practice, and is well able to deal fully and clearly with most of the points relating to the pathology and treatment of bodily deformities. Taking the term scoliosis in its widest sense, as including every form of permanent lateral deviation of the spine, or portion of the spine, Dr. Eulenburg discusses in this work not only the habitual and ordinary form to which English surgeons give the name of "lateral curvature", but also the less frequent forms of deviation to one or the other side, due to rheumatic changes in ligamentous structures, to morbid changes in bone, to congenital anomalies, and to empyema. The reader will not fail to gather here much information concerning both the rare and the common forms of spinal curvature, but he must be prepared to wade through many pages of critical and polemical discussion. The author, typically German in erudition and the wide range of his literary knowledge, is not content with giving his own ideas and the results of his own large experience, but often extends very much the length of his chapters by statements, sometimes in approval, often in criticism and dissent, of the views of other authorities on orthopædic surgery.

The information given in two preliminary chapters

on the normal form and the physiological movements of the spinal column, consists mainly in the usual references to the contributions of the brothers Weber, and in statements from the more recent work of Meyer. There will be found in this section a discussion of some interest on the supposed normal or physiological lateral curvature of the spine. In most text-books of anatomy it is declared that the spinal column presents in its dorsal region a slight curvature, the convexity of which is usually on the right side. That such a curvature exists, and that it is a normal and not a physiological condition, has been long recognised by most anatomists, and no little trouble has been taken to discover the cause of the deviation. Bichat and Béclard, as is well known, attributed it to muscular action and greater and more frequent use of the right upper extremity; by Buhning it was thought to be due to uneven lateral distribution of the viscera, and by Sabatier to the pulsations of the thoracic aorta; whilst Stadfeldt holds that it is congenital and the result of the early spiral twisting of the embryo. But, after all, it seems very doubtful whether in a perfectly normal spine lateral curvature of any extent is to be met with. The existence of such has been denied in this country by Little and Adams, the opinion of the latter surgeon having been based on frequent examinations of the dead body. This view is supported also by Dr. Eulenburg, who doubts the existence of physiological lateral curvature, and maintains that every lateral deviation of the spinal column from the middle line is pathological in origin and nature. The undoubted presence in most healthy individuals of a curved line in the back indicative of a curvature to the right side of the spine, the author accounts for by yielding and slight twisting of the apices of the vertebral spines in the dorsal region. This partial deviation is attributed by the author to muscular action, and especially to that of the trapezius and rhomboidei.

The author, in the course of a long chapter on the pathogenesis and etiology of scoliosis, states as the results of his own experience that the "habitual form of curvature", that generally understood in England when the term "lateral curvature of the spine" is used, is met with far more frequently in females than in males, and that the stage of childhood up to puberty is the usual period for the origin and the development of the deformity. With regard to the first point, the experience of Dr. Eulenburg is quite in accord with that of all other authorities on orthopædic surgery. Among the subjects of lateral curvature in Berlin, he estimates the proportion of females to males as 10 to 1. In London, a great excess of female subjects of lateral curvature has been observed in hospital practice; although, so far as can be learnt from tables, the proportion here is not quite so high, it having been estimated at rather less than 7 to 1. As to the period of life when lateral curvature first commences, a statistical return given by Dr. Eulenburg indicates a difference between the experiences of German and English surgeons. In most of our own orthopædic treatises, as well as in surgical text-books, the statement is made that the spinal deformity usually commences between the ages of 12 and 16 years, and that it is seldom met with before the former age. Although we have no available statistical returns by which this general statement may be confirmed, the elaborate tables that were published by Mr. Lonsdale in 1851 not dealing with this question of age, there can be no doubt that in this country lateral spinal curvature



is seldom developed until the commencement of puberty. In a table given in Dr. Eulenburg's work, of 1,000 cases observed by himself, it will be found that at Berlin the usual period of the commencement of the deformity is from the age of six to the age of ten years; whilst in 107 instances only the curvature commenced between the tenth and fourteenth years of life; in as many as 564 cases it commenced between the seventh and tenth years; in no fewer than 780 cases out of the 1,000 the affection was first noticed between the sixth and the tenth year. This statement as to the early development of lateral curvature in Germany we find confirmed by the opinion of Zink, who, in a contribution to orthopædic surgery in 1842, held that in his country habitual scoliosis usually commenced between the fifth and eighth years of age. This difference, the existence of which seems to be based on good evidence, might be accounted for by the facts that the children of the lower-class Germans are sent to school at an earlier age, and with greater regularity and frequency, than those of this country, that the school-hours are longer, and, probably, as is indicated by the author in a subsequent chapter, that less attention is paid in some parts of Germany to the prevention of scoliosis through suitable forms of desk and bench.

The theory of a scrofulous origin of habitual scoliosis is strongly opposed by the author, who holds that the main predisposing cause of this deformity is a feeble and relaxed bodily constitution, partly congenital, partly inherited. Scrofula, he states, no more predisposes a child to lateral curvature than it does to club-foot or to torticollis. From his views as to the mechanism of lateral special curvature, Dr. Eulenburg may be classed with the many orthopædic authorities who hold the so-called "muscular theory", and regard the deformity as due rather to some form of disturbed muscular equilibrium than to any changes in the form and structure of bone or ligament. His views, however, on this point are original, and he holds neither with Guérin, on the one hand, nor with Stromeyer, on the other. He does not agree with the former that scoliosis is the result of active and persistent muscular contraction due to morbid nervous irritation, nor does he support the view of the latter that it very often originates in unilateral paralysis of the serratus magnus muscle. Holding the opinion that the correct position of the spinal column depends on well-balanced action of its muscles, and that this equilibrium may be disturbed by central or pathological conditions, and by any degree of morbid state between complete paralysis and slightly impaired strength of one set of muscles, he goes on to argue that in the majority of cases lateral curvature is due to the last-mentioned cause. The deviation of the column caused by a faulty position in standing or sitting gives rise at first to extension, and subsequently to relaxation and feebleness, of the muscles attached to the convexity of the curve, whilst the muscles on the concave side pursue their normal contractile power, and so tend to maintain and increase the deformity. The primary cause of the affection, he states, is prolongation of the muscles of the convex side of the spinal curve; their nutrition becoming impaired and their strength reduced. The contraction of the muscles on the concave side is stated to be a secondary condition, and not, as Guérin held, a primary cause. It is the opinion of Dr. Eulenburg that, in at least 85 per cent. of all the cases of habitual scoliosis, this abnormal condition is caused and maintained by relaxation of the flexor and extensor muscles situated along the convexity of

the curve. To this view there seem to be serious objections. Judging from analogy and from what we know of the action of the muscles in other parts of the body under like conditions, we should indeed be disposed to question whether any set of dorsal muscles would, when subjected to irregular and intermittent extension, undergo relaxation, wasting, and loss of function. There is good evidence to show that such a change is not to be met with in cases of spinal curvature. Mr. W. Adams found on *post mortem* investigation that the muscles attached to the curved portion of the spine were rigid on the convex side, and not rigid and not prominent on the concave side. According to the observations of Gunther, as quoted in Chelius, "the muscles neither of the convex or concave side are much wasted in scoliosis, nor are they changed in form." This author held that the muscle which has an unfavourable position and is required to act with more power, increases in weight and strength; it was also stated by him that the latissimus dorsi muscle on the convex side of a curved spine is heavier by over 100 grains than its fellow on the concave side.

Dr. Eulenburg, in conclusion, deals at full length with the prognosis and therapeutics of the different forms of scoliosis. This portion, though it presents but little of decided novelty in the general principles therein laid down, will, together with all the preceding chapters of this complete work on an important and complicated subject of orthopædics, be read with much interest on account of its full discussion of most matters of detail.

W. JOHNSON SMITH.

*On Drainage of the Eye-Ball in Different Affections of the Organ, and especially in Detachment of the Retina. A Thesis for the Doctorate of Medicine.*  
By Madame STEPHANIE RIBARD. Paris. 1876.

Dr. De Wecker's discovery that a fine gold wire seton may be worn for weeks or even months in the eye without exciting any irritation, except in some very rare cases, promises well in the treatment of some of the most hopeless affections of the organ; and Madame S. Ribard has done good service in bringing some of his results prominently before the profession.

Wecker has found that the gold wire seton is effective in reducing tension in those cases of glaucoma in which iridectomy fails to produce a beneficial result; that it is also a most important remedial agent in commencing staphyloma, in cases of sclero-choroiditis anterior, as well as in hydrophthalmic affections. In these cases, the gold wire is passed through the margin of the cornea.

It is, however, to its application to the treatment of detachment of the retina that the *brochure* of Madame Ribard is specially directed; and it is much to be regretted that the cases cited are too incomplete to entirely establish its efficacy in the treatment of this lesion. In the seven cases cited, the improvement was very great in two only; in one case the result was disastrous, and in the other four either very slight amelioration followed, or the case was hopeless from the first. In none is the after-history of the case recorded. Professor Cohn, of Breslau, however, in the *Centralblatt für Augenheilkunde*, gives the result of four cases of detachment of the retina in high degrees of myopia treated by the gold wire. His results are more complete, but the particulars of the cases are not recorded at present. Cohn finds

that the gold wire may be worn in the sclerotic for several months without giving rise to any irritation ; that this is not invariable is, however, shown by one of the cases recorded by Madame Ribard. Good may be hoped for, even when the detachment has existed for three years. The contracted field of vision is almost always enlarged by the operation, a result entirely in accordance with the cases recorded by Madame Ribard, who gives diagrams of the field of vision in three cases, before and after the operation. Cohn states that, in cases in which colour-blindness exists, the perception of colour is not improved, and that the sensibility of the retina to light is not in the least increased. He omits to make any remark as to the effect of the operation on the sharpness of vision. He further states that after a longer or shorter period the retina again separates ; not, however, in bladder-like or wide portions, but in small wrinkles which are incapable of being remedied by the application of the seton. He regards the operation as a harmless adjuvant, from which much may be hoped when combined with other appropriate treatment ; and he states that no harm arose when the patients were allowed to return to their ordinary work, with the wire in the eye, from three to ten days after the operation. Cohn suggests the drainage-wire in the treatment of subretinal cysticercus.

B. T. LOWNE.

### NEW INVENTIONS.

#### SILICATE AND ENAMEL PAINTS.

That washable walls are preferable to those which are papered is a fact admitted by every student of hygiene, but the difficulty hitherto has been to obtain a material that will not be injuriously affected by washing or the fumes of gas. The objections to the use of ordinary lead paint are well known ; moreover, the fact that it is certainly injurious to the health of the workmen who use it should induce us to give preference to a non-poisonous material. This has been introduced by the Liverpool Silicate Paint Company, whose London offices have been decorated to show the various methods of applying the materials manufactured by the Company. Here we saw the ordinary white lead paint and the silicate paint exposed to the action of a jet of sulphuretted hydrogen gas ; and although the former turned quite black, the latter was unaffected, thus showing the absence of white lead. The material appears well adapted for hospital walls. The same Company's enamel paint gives a hard glossy surface, and has been successfully used at the Throat and Ear, Charing Cross, Bethlehem, and other Hospitals. As a paint for the wards, passages, and staircases we have seen nothing better. Some writers on hospital construction advocate the use of tiled walls, but the difficulty in getting the numerous joints perfectly smooth appears insurmountable. The glazed bricks used as an internal lining for the ward walls at the Children's Hospital, Great Ormond Street, have by some been highly commended. Having had an opportunity lately of inspecting these, we must express our conviction that they are not wholly satisfactory ; the joints project, are rough, and are difficult to clean. Where economy is an object, as in workmen's dwellings, &c., the same Company's washable distemper may be advantageously used. We can with confidence recommend these materials to the notice of our readers,

and advise them to see the application of them at either of the institutions we have mentioned, or at the offices of the Company, 107, Cannon Street, London.

#### LESLIE'S ALMONDISED COD-LIVER OIL.

Messrs. Leslie and Co., of Bond Court House, Walbrook, have turned their attention to masking the disagreeable flavour of the ordinary medicinal cod-liver oil. They have accomplished this end by making cod-liver oil of the best quality, and communicating to it an agreeable almond flavour. Taken either by itself or in milk, this form of cod-liver oil is well tolerated, as well by children as by the ordinary class of patients requiring the administration of this valuable therapeutic agent. It may, therefore, be confidently recommended where the ordinary forms of cod-liver oil are found to be so distasteful as to constitute an obstacle to its exhibition where required.

#### VIN DE BAUDON.

Vin de Baudon is one of those agreeable pharmaceutical preparations in which French pharmacists excel. It is a wine of most agreeable flavour, and good alcoholic strength, containing in each litre bottle 18 grammes of biphosphate of lime, with a quantity of citro-chloride of antimony, equivalent to 11 milligrammes of metallic antimony. This wine is recommended as an agent in strumous and physical diseases. A considerable amount of evidence of its effects is said to have been accumulated in the experience of Dr. Labbé, senior surgeon of La Pitié ; Dr. Gombault ; Dr. Molland, senior physician of the Hôpital St. Antoine ; Dr. Jules Worms ; and in this country by Dr. Langdon Down, Dr. Russell Reynolds, and Dr. Thorowgood, and other well known physicians. In some cases reported from the London and Paris hospitals, in which this medicated wine and a liberal diet were the only treatment, patients are stated to have shown rapid improvement, dating from the commencement of the treatment. Its peculiarly agreeable character and favourable influence on the digestion are especial recommendations of the Vin de Baudon. The London agents are Messrs. Pagny, Wallace, and Co., 3, Finsbury Pavement.

### MISCELLANY.

DR. WUNDERLICH.—The *Berliner Medicinische Wochenschrift* announces the death, on September 25th, after a long illness, of Dr. Wunderlich, author of the classical treatise on *Medical Thermometry*, and director of the Medical Clinic at Leipzig.

THE King of Sweden and Norway has conferred the decoration of Knight Commander of the Norwegian Order of Olaf on Dr. William Pepper, of Philadelphia, in acknowledgment of services rendered to the Norwegian Commission at the American Centennial Exhibition in 1876.

THE DISCOVERER OF PHOTOGRAPHY.—Mr. Fox Talbot, the discoverer of an early process of photography known as Talbotype, died, at the age of seventy-seven, at Lacock Abbey, Wilts, on September 17th. Mr. Talbot was one of the earliest labourers in a field of science which has given important results. Mr. Talbot was the first to obtain photographic pictures on paper, and to discover that sensitive paper, during the first few seconds of its exposure to the light, receives an invisible image perfect in all respects, and that, in order to render the image visible, it is sufficient to wash the paper over with gallic acid or some other



astringent liquid. In 1842, Mr. Talbot was presented with the gold medal of the Royal Society in recognition of the part which he had taken in the discovery of photography. In 1851, Mr. Fox Talbot presented to the Royal Society, and also to the Académie des Sciences at Paris, an account of sundry further experiments which he had made in the direction of obtaining instantaneous photographs; and two years later he published a notice of some successful experiments in the application of photography to the work of engraving on steel plates. Of late years Mr. Fox Talbot employed much of his time in the study of languages, and especially in the work of deciphering the cuneiform inscriptions on Assyrian monuments. He was also the author of several valuable works.

**A TURKISH LADY DOCTOR.**—The *Times* correspondent, writing from Chalcis, says: In the afternoon, I paid a visit to a most interesting Mahomedan lady, Doodò by name. She is the daughter of a surgeon, and practises her father's art with such success, that the Greek doctors have to content themselves with the smaller share of the local business; yet, to their credit be it said, though it is contrary to the law that Doodò, unlicensed as she is, should carry on her profession, they have taken no steps to prevent her. Her patients are Christians as well as Mahomedans (one Englishman at least has been cured by her), and she sues those who fail to pay the fees in a Christian court by means of Christian lawyers. I found Madame Doodò seated with her husband, who is also a surgeon, and wearing, of course, the yashmak.

ACCORDING to recent observations of Mr. A. Sangster (*Quarterly Journal of Microscopical Science*), the epithelium of the sweat-glands rests directly upon the muscle surrounding it.

**DELICATE ATTENTIONS.**—In America, where women physicians now occupy a well-established place in medical organisations, including positions of honour, such as vice-president of the most scientific of the medical societies of New York, the influence of feminine character appears to cling very naturally and pleasantly to the ladies who have adopted the healing art as their vocation. At the last annual meeting of an important medical congress, a special vote of thanks was accorded "to Mrs. Dr. Garcia for the floral decorations of the hall".

**PHARMACOLOGICAL LABORATORY IN BERLIN.**—An arrangement has been adopted in the University of Berlin, which will probably be imitated in the other German universities. A provisional Pharmacological Institute has been formed, under the guidance of Professor Owen Liebreich. It contains a physiological and a chemical department, intended for pharmacological, physiological, and chemical researches. The Prussian Government is about to build a new laboratory for these purposes.

**LEPROSY.**—The report of the Children's Hospital at Jerusalem has been printed. It says:—"We are of opinion that leprosy can only be cured in its earliest manifestations and in children. The children must be brought under good hygienic circumstances, the first symptoms rationally treated, and the causes of leprosy eradicated. In this way, by the progress of civilisation, we have reason to hope that leprosy will also be exterminated in this land of promise. By shutting up adult lepers and feeding them gratuitously, as many kind people now do in Jerusalem, nothing towards the extermination of leprosy will be effected. The medical treatment of adult lepers is of little or no use, as has been proved by the experience of centuries in all countries of the world." Among the children in the hospital are forty-four Mahometans, twenty-two Christians, and four Jews.

**NOVELTIES OF THE MONTH.**—The medical journals present (says the *Pharmaceutical Journal*) but few novelties in the matter of drugs and their uses. The wood of the tupelo tree (*Nyssa villosa*, Mich.) has been recommended instead of sponge for making tents; the action of the

alkaloid of pao pereira bark (*Geissospermum leve*, Baill.) has been investigated, and found to paralyse all voluntary motion (the bark has long been used as a febrifuge and ante-periodic in Brazil); the use of chloride of calcium in atrophy of infants, especially when arising from tuberculosis, has been revived by Dr. R. Bell, of Glasgow; coffee has been found to have antidotal powers against strychnia; and the inhalation vapour of nitrite of amyl has been successfully used in a case which nearly proved fatal from the use of chloroform. It has also been shown that linseed, almond, or mustard meal has the peculiar property of removing disagreeable odours from the hands.

**WHITE-LEAD POISONING.**—Workmen employed in the manufacture of white-lead are always liable to lead-poisoning, both by inhaling the dust and in touching the lead with the hands. Various correctives for this have been employed, and, among these, the latest and most simple is a careful washing of the hands in petroleum. Three washings a day are reported to be sufficient to prevent all serious danger of poisoning. The benzole in the petroleum is said to scour the skin and remove the dust of lead, and the fatty substance in the oil prevents the absorption of the lead-salts. The experiments made in petroleum used in this manner give such good results that it is proposed to use the same material as a guard against poisoning in other trades where the salts of copper or mercury are employed.

**THE COLOURING MATTER IN HUMAN HAIR.**—At the recent meeting of the British Association, Mr. H. C. Sorby gave a provisional account of certain experiments with reference to the colouring matter in human hair. He had been able to separate several well-marked differently coloured substances, and the chief of these were a black pigment and a red-brown substance, which, when oxidised, passed into a yellow colouring matter. The very red human hair contained a small quantity of a pink-red substance, yet by far the greater number of different tints of human hair might be explained by supposing that it contained a varying amount of a valuable mixture of the above-named three substances.—Professor Rolleston opened an interesting discussion by asking how these researches might bear upon the popular belief that hair like that of Marie Antoinette might turn grey in a single night from mental anguish. The colour could scarcely be taken out of hair by a strong reagent, and what likelihood, therefore, was there that such a story was true.—Dr. Gwyn Jeffreys thought that Mr. Sorby's experiments went far to explain how hair could be both black or red in the same race or family. He did not know whether they were aware that there was a typical Devonshire colour for hair. Some time ago, he asked a well known hairdresser what his experience was about colour. He replied that there were many things, but above all this, he sent travellers into the different counties with their stock of artificial hair; many orders came back, but from Devonshire there was a vast run upon a certain brown tint, so much so that in his shop it received the name of Devonshire brown.—Mr. Sorby, in the course of his reply, said, so far as his experience went, he did not think it possible that hair could change colour in one night.

**ROMAN FEVER.**—The cases of fever in Rome begin to increase slowly in June. The rate of augmentation progresses far more rapidly during July, and is generally at the highest in August. For although all medical testimony goes to warrant the assertion that September is the worst of all the months in the year as regards the results of malarious fever, it seems to be certain that the cases are not then so numerous as during the greater heats of July and August. But the September cases are apt to be by far the more serious. Medical practice in Rome distinguishes Roman fever of the worst sort as almost a separate malady under the dreaded name of a "perniciosa"—the phrase clearly meaning only a fever of a bad or pernicious degree of intensity. But the difference is sufficiently marked to cause a "perniciosa" to be spoken of as something quite apart from a common attack of Roman fever; and September is the month in which the greatest number of these bad cases occur.

# The London Medical Record.

## ON SPASTIC SPINAL PARALYSIS (TABES DORSAL SPASMODIQUE, CHARCOT).\*

By Dr. WILHELM ERB, Professor at Heidelberg.

IN No. 26 of the *Berliner Klin. Wochenschrift* for 1875, I have depicted, in a passing communication, a special group of symptoms, which I considered sharply characterised and distinguished by definite pathological outlines from the great group of spinal paralyses, called tabic diseases. By tolerably numerous observations, it seemed proved to all that this aggregate of symptoms differed from tabes, multiple sclerosis, transverse myelitis, and other forms of chronic spinal disease, and, regarding its frequency and practical importance, deserved very properly recognition as a distinct morbidity, which obviously must depend upon a definite anatomical change. I had originally described the cases met with, which I had known for a long time, as a paralytic form of tabes; but later I perceived that they could not possibly belong to the ordinary tabes dorsalis—sclerosis of the posterior columns—as, from the masterly teaching of Schiff, we know that the anterior columns are the chief conductors of motor impulses, so I described them in my case-books and journals as “degeneration of the anterior columns”. At the time of my fugitive communication, this interpretation was outstripped by the progressing acquaintance with the physiology and pathology of the spinal cord; and, especially on account of various, otherwise fragmentary, communications and observations of Charcot, we began to think of a preponderating lesion of the lateral columns. The leisurely perusal of my case-books and attentive study of the disease made me feel its relative frequency and its sharp and pregnant characteristics, so that I was brought to sketch out its clinical aspect and to publish it. The disease is repeatedly spoken of in the newest current literature under the perhaps not yet well established name of “lateral sclerosis”. From the most competent source—Charcot himself—a description emanated, not long ago, which in all material points is in accordance with my own. At the time of my first publication, the doctrine of this disease had already a certain historical existence; there were scattered facts and data in literature which apparently might be placed in connection with it. As I was aware of this, in my first paper I avoided describing the disease as “new”, and spoke of it only as a “little known” group of symptoms. For instance, Charcot had already long before defined and described certain important and constant appearances of this disease as depending upon sclerosis of the lateral columns, so that I could thereby show the probability that the clinical picture more completely drawn by me had its anatomical basis in a primary chronic sclerosis of the lateral columns, and that it was no other than a farther and more complete development of the significantly sketched lateral sclerosis of Charcot. It may be permitted to me to inquire shortly into the previous

communications, and to mark out strictly the part which each observer has had in the doctrine of “lateral sclerosis”, and to point out the loopholes which this doctrine still presents.

The first observation was due to Türck (1856). After he had made many observations upon secondary degenerations of the lateral columns, he published three cases of apparent *primary* degeneration. There were loss of motility, formication, pains in the back and extremities; but no anæsthesia. These observations remained apparently unnoticed. In 1865, Charcot published a case of “hysterical contraction”, which repeatedly appeared and disappeared in a patient, but finally remained permanent for nine years, and affected all four extremities. Dissection showed bilateral sclerosis of a great part of the lateral columns. This led Charcot to infer that permanent contractions had something to do with sclerosis of the lateral columns, an inference which later on he proved by numerous observations. Then, too, Charcot related that in other cases of lateral sclerosis (not there described) more paralytic phenomena had been present. In a very interesting work upon two cases of progressive muscular atrophy, which were combined with lateral sclerosis, Charcot developed, in short detail, the clinical appearance of the latter. Paralytic feebleness, amounting even to paraplegia; later on more and more marked rigidity of the limbs, reaching to excessive contraction, but without loss of sensibility, are the important features of the picture which Charcot had gathered from various observations made in the Salpêtrière. These observations were, unfortunately, never published. In a communication to the Société de Biologie, in 1874, Charcot again described the clinical and anatomical peculiarities of primary lateral sclerosis, and said of it:—“The most prominent symptom is the progressive muscular atrophy. This form of atrophy has special characteristics from the very beginning—a general muscular weakness, debility of upper and lower extremities, without affecting sensation, or the bladder or rectum.” Here, evidently, is meant the *sclérose latérale amyotrophique* classically described by Charcot, which probably must not be confounded with the more common one-sided lateral sclerosis. In his *Leçons Cliniques*, in which Charcot describes at length this *sclérose latérale amyotrophique*, we are again told “que la paralysie domine certainement la situation”, again emphasising more the paralysis. The numerous and important labours upon the so-called secondary degeneration of the lateral columns had the effect of making more certain the spasmodic conditions and the contraction, but could teach nothing further on the symptomatology of primary sclerosis. As one sees, the doctrine of lateral sclerosis had in no degree arrived at a conclusion: it had only been recognised as a partial phenomenon of another process, and thence had been constructed a scanty symptomatology of the primary form. Not a single example of the real “primary lateral sclerosis” existed in literature. Voisin’s case is much too complicated for him to have been able to give a satisfactory exposition of the question. The observations on which Charcot’s opinions were based are to-day, as he himself says, only “old, somewhat faded, recollections”. In fact, the exact symptomatic description of lateral sclerosis was nowhere written, and the frequent occurrence and the easy recognisability of the group of symptoms described by me were not known, at least by us in Germany. As to all the cases, I was right—and we are to-day not one step farther in this matter—to be

\* Virchow’s *Archiv*, June and July 1877.



in some measure cautious in describing this group of symptoms as lateral sclerosis. Satisfactory *post mortem* evidence failed then, and fails us still to-day. Equally was I justified by my relatively numerous cases in meanwhile introducing the disease into nosology; as, by the discovery and precise following up of the reflex movements of the tendons, by depicting the earliest stages of the disease, and by clearer descriptions of certain peculiar and diagnostic distinguishing features, I could give it greater completeness and development. And if, later on, it should be established that this group of symptoms really belongs to sclerosis of the lateral columns—of which, for my part, I have no doubt—no one will be able to deny that I first framed a complete and exhaustive clinical sketch of “lateral sclerosis” by which everyone could recognise and diagnose the disease.

Since my first publication, which in May 1876 I contributed on the occasion of the meeting of the south-west German neurologists and alienists at Baden, various articles have appeared to the same effect, most of them in Germany. F. Richter, of Sonneberg, has published four cases of a spinal affection which he attributes to sclerosis of the lateral columns. To my mind these do not belong to the same category as the group which I described, or they have only very remote relations to it. O. Berger,\* about the same time, published an elaborate article on “Primary Sclerosis of the Lateral Columns”. He collates the physiological and pathological data which we possess regarding the lateral columns, and on that basis describes the disease as “primary lateral sclerosis”, although he had not the result of a single necropsy to show; and since the appearance of my fugitive communication, not one single fact has become known which could give this conjecture greater certainty than I had expressed regarding it. In a more recent article, Berger expresses himself with more reserve on this point, since he has seen that Charcot himself, on whose earlier data he had in some degree relied, does not even yet speak with complete certainty on the matter, but assigns to the disease a symptomatic name. Nothnagel communicated a case which in its later stage presented the characteristics depicted by me, but in the commencement was complicated by an acute myelitis or a hæmorrhage into the substance of the cord. Finally, Charcot has published his views and experiences on “lateral sclerosis” in a complete form. Under Charcot’s name of “tabes dorsalis spasmodique” Bétous published an article in which he communicates the views of his esteemed teacher, publishes a case (without necropsy) and explains clearly and correctly the pathology and therapeutics of the disease. The expositions of Charcot himself have only quite recently been published. They do not contain much more than Bétous’ article. He sketches clearly and completely the outline of the disease already drawn by me, considers himself not yet quite justified in bringing it into certain connection with primary sclerosis of the lateral columns, and admits that his earlier observations are relatively old data, “not much more than somewhat faded recollections, which require freshening up”. It is, therefore, better to give the disease at present no anatomical name, but to await the results of further *post mortem* examinations. Charcot holds, as one sees, essentially the same position as I do. The

clinical existence of the disease is not doubtful to him, but still its anatomical basis is uncertain, although he regards it as extremely probable that it exists in the lateral columns. Leyden devotes a section of his book on diseases of the spinal cord to “Sclerosis of the lateral columns”, but keeps himself in a very reserved and critical attitude towards Charcot’s views, especially on amyotrophic lateral sclerosis. My group of symptoms is despatched in a note of a few lines. Leyden doubts their connection with lateral sclerosis; he thinks, rather, that they have to do with some central lesion of the cord. Against this view, which scarcely merits serious discussion, as it is hardly reconcilable with the described symptoms, Berger has already brought forward a string of arguments. That which Leyden himself brings forward as a very typical case of *primary* lateral sclerosis is from its clinical features obviously nothing but a case of old cerebral syphilis, and the lateral sclerosis is probably to be considered secondary. The anatomical appearances, moreover, agree with the observations elsewhere regarded as secondary degenerations. Unfortunately, the state of the brain is not given. Still it is possible, as I could quote a case to show, that synchronously with the expressed cerebral syphilis a lateral sclerosis of syphilitic origin took place, but this should have been shown. So it remains still to be proved whether the group of symptoms described by Charcot and by me belongs to lateral sclerosis or not. Further investigations must decide thereupon. But it can no longer be denied that the clinical form exists, and is allied to tabes, multiple sclerosis, transverse myelitis, etc. Still the description is capable of some extension and improvement. I do not neglect, therefore, to present here a large number of cases which I have observed, partly to give my communication the necessary basis of facts, partly to add to the scanty details of the subject. [For these we must refer the reader to the paper itself—*Rep.*]

From these cases (16 in number) which present as perfect and uncomplicated a picture as is possible of the group of symptoms we are discussing, we can deduce the following facts as to the commencement and initial stage of the disease. Alterations of sensation were present in seven out of twelve cases; in the others there were neither pains, abnormal sensations, nor anæsthesia. In one case, the pains in the legs were perhaps due to an existing complication of chronic arthritis. In the other six, various disturbances of sensation were present at the commencement of the malady; important irritation phenomena, but throughout of a moderate kind. The patients soon began to complain of heavy dragging and tearing pains in the loins and legs; soon a noticeable sensation of weariness occurred, soon burning feelings or sensations of cold in different parts of the skin, more seldom formication and pricking or numbness of the finger tips. All these feelings were very variable in their intensity and occurrence. They generally made their appearance during the first month of the disease, but sometimes recurred often for a year. The pains were never very bad, not to be compared with the severe lancinating pains of tabes, nor with the severe excentric neuralgias in chronic compression of the spinal cord. There was no instance of pure anæsthesia in the beginning of any case, the data in case 12 on that head being uncertain. We find, therefore, that at least half of our cases were complicated in the commencement of the disease by decided but still only moderately intense irritation phenomena (pains and modifications of

\* Dr. Berger writes to the Editor, to complain of the tone of Professor Erb’s paper. I have felt justified in omitting certain passages which do not appear to require reproduction.—R. S.

sensibility). Previous observers have not attached so much importance to these alterations as appears justified by my cases. Bétous speaks only of lumbar pain as a rare occurrence; Charcot devotes only two lines to their consideration. According to Berger's first article, pains were invariably absent, occasionally there were formication and feelings of cold, but in three cases which he gives in his latest paper there were decided pains in the commencement, so that he has correspondingly modified his original opinion. On the other hand, motor disturbances are quite characteristic in the initial stage. They fall under two headings, those of motor feebleness and paralysis, and those of motor irritation or of spasm. The first are invariably the earlier, and precede the second by a more or less prolonged period. The initial feebleness is always a kind of weariness of particular groups of muscles, of which the patient complains. The feebleness gradually increases, at first being recognised only by shorter possible duration of movements and the increasing inability to walk far, becoming actual paralysis only after a considerable time. The localisation of these paretic symptoms may vary in the same case. In all my cases (with one exception only) it began in the lower extremities, not always equally in both legs; perhaps more frequently it began in one leg, and after a time passed to the other. In four cases the paresis attacked first the leg and then the arm on the same side, so that it became after a time hemiplegic before the other leg got involved. Such cases offer a superficial resemblance to cerebral paralysis. In eight cases the disease later on principally attacked the arms, in one case in a very decided manner. The frequency of extension of the disease upwards is greater than from my earlier observations I had believed. In one case, which showed besides many other peculiarities, the disease began in the upper extremities, and in an almost unilateral fashion attacked the lower extremities, reaching in these a very high degree. Previous authors have fully defined the constancy, localisation, and extension of this initial feebleness. O. Berger in his first article describes the hemiplegic form, and in his later work treats of it very elaborately. The initial motor irritative phenomena were present in all the cases where a careful history could be gained. The patients soon complained of stiffness in their muscles, especially during certain movements; soon, too, of spontaneous forcible contractions in the legs and arms, soon of cramps, tonic spasm of special muscles and groups of muscles (*e.g.*, in the calf, in the extensors of the toes, the flexors of the fingers, etc.), of clonic twitchings of the leg if while seated they raised their feet on the toes, etc. Such and similar appearances were noted in 10 out of 13 cases; in three all data are wanting, so it is possible they were present in them. Stronger irritation phenomena, lively clonic cramps, and decided contractions, were never found in the earliest stages. They may, however, be present very early; Charcot relates under the initial symptoms an early tendency to cramps. Berger mentions in his cases sometimes stiffness, sometimes short involuntary tonic extension or flexion movements, frequently a tendency to clonic muscular contractions. On the early relations of the reflex condition of the tendons, I possess only a few trustworthy data. In six cases only did I see the patient early enough to get any experiences thereon. In four of these cases this condition was decidedly increased; in two cases it was not specially raised. In one of these, however, it became very

marked in a few weeks. If one might draw any conclusions from experiments on the upper limbs which presented only the earliest stages of paresis, it might be inferred that this increased reflex excitability belongs to the earliest stages, and is scarcely ever absent. For in such cases one finds the reflex condition of the tendons of the upper extremities very much exaggerated. But we need more careful investigations as to the particular period in the course of the disease at which this phenomenon is first noticeable, in order to gain a secure basis. These above related disturbances of motion and sensation, together with the exaggeration of the reflex excitability of the tendons are the only symptoms which are present in the first stage of the disease. As a rule, no other symptoms are present. In nine of thirteen cases absolutely nothing else was noted; no spinal phenomena, no cerebral disturbances, no alterations of general nutrition, no atrophy, etc. In only one of my cases there were early bulbar symptoms (difficulty of speaking and swallowing); in two other cases there was slight bladder-paresis, but only observed as a transient appearance; in one case the patient complained of having had occasional attacks of vertigo in the commencement of his illness.

R. SAUNDBY, M.D.

[To be continued.]

#### RECENT RESEARCHES ON IDIOPATHIC (ESSENTIAL OR PERNICIOUS) ANÆMIA OF ADDISON.

(Continued from page 316.)

PROFESSOR ROSENSTEIN, of Leyden, has published another case of pernicious anæmia in the *Berliner Klin. Wochenschrift* for February 26, 1877. He writes in complete ignorance of all the observations previous to those of Biermer and Immermann, and even thinks that this first case observed in Holland may serve to show that the disease is unconnected with any local circumstances in Switzerland and Suabia (!). The patient was a man aged 36, who was strong and well until attacked by "typhus" (enteric fever is meant) six months before he was seen. This lasted eight weeks, and he had never recovered his strength. Lately he had suffered from diarrhoea and oedema of the feet. On admission into hospital, November 3, 1876, he showed all the well-known symptoms described by Addison and Wilks, with a loud systolic murmur, audible at the apex and over the aortic valves, but not in the direction of the pulmonary artery. The morning temperature was normal, but between three and six in the afternoon it reached 101.5° F. The blood showed little or no increase of leucocytes, but marked diminution of red disks; these were remarkably pale, but retained their normal shape and formed rouleaux as usual. The microcytes described by Quincke and Eichhorst were absent. Minute ecchymoses were seen by the ophthalmoscope near both papillæ. The only symptoms, beside weakness, of which the patient complained, were a slight cough and headache, increased when sitting up in bed. Five grains of quinine were given three times a day with iron, but (as is well known in England) these remedies were without effect, the quinine not even reducing the evening temperature below 38.4 or 38.7 (101 or 101.7° F.). On December 2nd the patient fainted, and on recovery complained of short breath. There were physical signs of passive effusion in the left pleura and peritoneum, and death quickly fol-



lowed from œdema of both lungs. *Post mortem*, beside excessive anæmia of all the organs, nothing was found but enlargement of the liver and spleen; the cells of the former were in a condition of cloudy swelling, which Dr. Rosenstein refers to the preceding enteric fever. The spleen weighed 445 grammes (more than 14 oz.). Its internal condition is not mentioned, but apparently this enlargement is also regarded as of typhoid origin. The intestines, however, are reported as completely normal, and there is no mention of swelling of the mesenteric lymph-glands. There was no fatty degeneration of the muscles of the heart. The marrow was pale red and showed no increase of leucocytes when compared with that of another subject. Charcot's octohedral crystals were present (a normal *post mortem* appearance). The retinae were carefully examined by M. Nykamp, whose report with woodcuts is appended. He could find no rupture of vessels and no minute aneurisms, and the endothelium was perfect. He thinks that the red corpuscles found in the retinal tissues must have passed out by diapedesis. An analysis by Professor Tranchimont showed that iron was present in the proportion of  $\frac{1}{2}$  per cent. of dried liver, .227 in the dried splenic tissue, and .04 in that of the kidneys. According to an analysis by Oidtman, the healthy liver contains .08, and spleen .15 per cent. of iron. The increase in the present instance may, Dr. Rosenstein thinks, be due to the steel he had prescribed (*Martialia—nicht viel*) rather than to destruction of hæmoglobin in these organs. The same excess of iron had been noted by Quincke, but in his cases also steel was given. In conclusion, the author remarks that, but for the retinal hæmorrhage, the case might have been mistaken for one of cardiac disease with (ulcerative) endocarditis.

Professors Gardner and Osler, of Montreal, publish in the *Canada Medical and Surgical Journal* for March 1877, the following case, headed, "Progressive pernicious anæmia (idiopathic of Addison)." A man aged 52 came under observation in November 1876. He had always been subject to diarrhœa, and also, with others of his family, to epistaxis. After family bereavement five years previously, he had begun to fail in health, and, very gradually, pallor and dyspnœa had appeared and increased upon him. He had lately had five or six loose motions daily, and his skin and mucous membranes were excessively pallid. There was no fever, no emaciation; he ate and slept well; the urine was normal, the liver and spleen not enlarged. The heart-sounds were unaffected, but there was a venous murmur in the neck. There was no increase of pigment in the skin, and no enlargement of lymph-glands. He was prescribed steel, and the diarrhœa ceased, but a loud bruit appeared, audible at both base and apex of the heart. As he became worse, the temperature occasionally rose to 101 or 102° F., but fell before death to 97.3°. He died in January 1877, with vomiting, rambling, and other signs of exhaustion. The blood, examined during life with Hartnack No. 9 (immersion) oc. 3, showed the following characters. The white corpuscles were not increased in number. They measured  $\frac{1}{2500}$  to  $\frac{1}{2000}$  inch in diameter. They showed active amœboid movements, at the temperature of the room, for seven hours after the drop of blood had been mounted (without reagent) in a paraffin cell, and carried through the cold air for a quarter of a mile (see Ranvier's statement, *Traité d'Histologie*, p. 210). The red corpuscles formed rouleaux; as usual,

a few were crenated, most of them ovoid, lozenge-shaped, or irregular, larger than usual, but of normal depth of colour. There were also a few much smaller ones, which were spherical instead of biconcave. None had nuclei. Measured with Hartnack, No. 16 immersion, one was as large as  $\frac{1}{1333}$  inch, five varied between  $\frac{1}{2150}$  and  $\frac{1}{2145}$ , twenty-two between  $\frac{1}{3000}$  and  $\frac{1}{2500}$ , and five between  $\frac{1}{5000}$  and  $\frac{1}{6000}$ .

*Necropsy.*—The skin was of a pale lemon tint, the fat abundant, the nails incurved; no petechiæ. There were twelve ounces of fluid in the left pleura, and nearly as much in the right. The heart appeared practically normal, but on microscopical examination the fibres showed extreme fatty degeneration. This was absent in the muscles of the trunk, which were red in colour. The spleen weighed six ounces; the right kidney was congested, the left pale; the suprarenals normal; tonsils not enlarged; stomach and intestines normal; liver pale and not enlarged; mesenteric and other lymph-glands small; blood-vessels very empty. The marrow of the sternum, right fibula, and left clavicle, of a rib and a vertebra, was examined. It was dark red in colour, and showed the following elements under the microscope: (1.) Ordinary red marrow-cells, *i.e.*, leucocytes, differing from white blood-corpuscles only in their somewhat larger size and more distinct nucleus; these were by far the most abundant. (2.) Ordinary red blood-discs, together with a smaller proportion ( $\frac{1}{4}$  or less) of the minute spherical red corpuscles (Eichhorst's "microcytes") above described as occasionally found in the blood. (3.) Nucleated red corpuscles, spherical, and larger than ordinary blood-discs, varying in diameter from  $\frac{1}{2037}$  to  $\frac{1}{1774}$  of an inch in diameter. These are Neumann's "embryonic corpuscles". (4.) Large cells containing as many as five or six red blood-discs. (5.) *Myéloplagues*, only sparingly found in the sternum and rib. (6.) Fat-cells, absent (as usual) in the sternum, vertebra, and rib, present in small numbers in the clavicle (cancellous tissue or shaft?). (7.) Charcot's crystals.

This carefully recorded case is followed by remarks which bear chiefly on the condition of the blood and on that of the marrow. Since Eichhorst (*Centralblatt für die Med. Wissensch.*, June 24th, 1876) called attention to the presence of minute spherical red corpuscles in the blood of essential anæmia, Dr. Osler has seen them in another case beside the present, and, as above noted, they have been observed by Quincke and by Cohnheim. In other cases, however, recorded by Grainger Stewart (*Brit. Med. Journal*, July 8, 1876), by Bradbury (*ibid.*, December 30, 1876), and by Bradford (*Boston Med. and Surg. Jour.*, May 1876), their presence is expressly denied; and in other microscopical observations of the blood in anæmia, they are not mentioned. Moreover, Dr. Osler has found similar corpuscles in his own blood and in that of persons free from disease.\*

With respect to the state of the marrow, Drs. Gardner and Osler remark that cases of anæmia lymphatica (leucocytosis, pseudo-leucémie) cannot be called Hodgkin's disease when the lymph-glands and spleen are not enlarged; but, when the red marrow alone of all the cytogenic structures is hypertrophied, the other symptoms of the disease would approach very near to the idiopathic anæmia of Addison, so that Pepper, following Immermann and Jaccoud, has sug-

\* On this point, see also a paper by Dr. Litten, reported in the LONDON MEDICAL RECORD for March last (p. 120), and some careful observations by Messrs. Davy and Mackern of Guy's Hospital, published in the *Lancet*, May 5, 1877.

gested that essential anæmia is nothing but the myelogenous form of pseudo-leuchæmia, bearing the same relation to Hodgkin's disease that the rare cases of true leuchæmia with hyperplasia of the marrow do to ordinary splenic leuchæmia. Inasmuch, however, as in many cases of idiopathic anæmia the bones have been carefully observed and found healthy by Lepine (LONDON MEDICAL RECORD, September 15, 1876, p. 398), Burger, and Quincke, they believe that the cases of Cohnheim (Virchow's *Archiv.*, lxviii, 1876), Fede, Pepper, and Scheby Buch (*supra*, p. 318) must be ranged with their own, as examples of myelogenous pseudo-leuchæmia (or anæmia medullaris) though indistinguishable during life from idiopathic or essential anæmia.

Dr. Litten publishes, in the *Berliner Klin. Wochenschr.* for May 7 and 14 of this year, the following remarkable case from Professor Frerichs' wards. A young woman had been suckling her own and another infant for several months, while herself ill provided with food, and in January last (1877), more than a year after her delivery, began to vomit all she took. When admitted to the Charité on February 11, she was already much exhausted and excessively anæmic, and loud venous and cardiac murmurs were audible. Retinal hæmorrhages were also observed with the ophthalmoscope. There was no excess of white blood-corpuscles, but the red ones were greatly diminished, though normal in shape and without microcytes. The liver, spleen, and lymph-glands were not enlarged, and, though so weak and pallid, the patient was not emaciated. The chief complaint was of headache. The pulse was frequent and compressible, the temperature normal. On the 15th of February a remarkable increase of white corpuscles was found in the blood. These were larger and less granular than usual, and contained each a distinct large nucleus, or sometimes two (resembling medullary rather than ordinary or splenic leucocytes). On the following day only nine red could be counted to one of these white corpuscles; on the 17th the proportion was only 4 to 1. At the same time the patient became restless, and suffered from severe dyspnœa, without any evidence of œdema or other affection of the lungs. This rapidly increased, and on the 18th, only a few weeks from the appearance of anæmia and vomiting, and after three days of leuchæmia and dyspnœa, the patient died. There was neither albuminuria nor pyrexia while she was under observation.

At the necropsy the body was found excessively anæmic, but with plenty of fat, and the muscles red and healthy in appearance. The heart, on the contrary, was in an extreme condition of fatty degeneration. The liver and internal lymph-glands were normal. The spleen weighed 200 grammes ( $7\frac{1}{2}$  ounces). The kidneys contained a number of minute white nodules, which proved on microscopical examination to be lymphomata. The tissue of the vertebræ and pelvis, the sternum and the ribs, was unchanged, but that of the long bones of both upper and lower extremities showed numerous spots like abscesses in their shafts; and their yellow marrow was turned into a soft pale material, which proved under the microscope to consist of the same large colourless cells, with distinct vesicular nuclei, which had been observed in the blood before death. The normal yellow marrow-cells (fat-cells) had almost entirely disappeared. No nucleated red corpuscles were discovered in the blood or in the marrow. Charcot's crystals were abundant.

The origin and course of the disease as one of idiopathic anæmia were well marked, and offered nothing more remarkable than its unusually rapid course, but the sudden and extreme increase of leucocytes was unexpected, and makes the case a unique one. The most acute cases of leuchæmia myelogenica on record are that of Küssner (*Berl. Klin. Wochenschr.*, 1876) which proved fatal in 18 days, and that of Immermann (*Deutsches Archiv für Klin. Med.*, vol. xiii) when the patient lived six weeks. In both these (as in many other cases of leuchæmia) there was pyrexia, which was remarkably absent in the present instance. As Dr. Litten justly remarks, it must be regarded as idiopathic anæmia, passing into medullary leuchæmia, and both running a very rapid course. Comparing it with four unpublished cases of essential anæmia, three from Professor Frerichs' wards during the winter session 1875-6, and one under the care of Professor Fischer at Breslau, in 1875, he remarks on their agreement in (the characteristic features pointed out by Addison) excessive anæmia, absence of emaciation, fatty degeneration of the heart, and progressive and fatal course. The hæmorrhages, whether in the retina or elsewhere, must, like the "tabby degeneration" of the ventricles, be regarded as consequences of anæmia, for cases are on record in which both were absent. The heart is often fatty (as described by Dr. Quain) in non-anæmic cases, though not usually so in ordinary leuchæmia; while hæmorrhages in various parts are common in lymphatic and splenic anæmia (Hodgkin's disease and leuchæmic splenica), so that their presence cannot be taken as diagnostic of essential anæmia. Dr. Leiden examined the retina to determine this point in nine cases of anæmia—three idiopathic and fatal, one from cancer of the uterus, two from hæmorrhage after abortion, and three from hæmatemesis. There were retinal ecchymoses in all of these cases but two—one of essential anæmia, the other of anæmia due to hæmatemesis, which ended in recovery. After a full discussion of the ophthalmological side of the question, he concludes that neither retinal hæmorrhage nor white atrophic centres in previous ecchymoses, nor the shining white patches seen in some cases of Bright's disease, are diagnostic of fatal anæmia. He confirms Nykamp's statement that the ecchymoses do not depend on miliary aneurisms of the retinal arteries like those in the brain; but he does not believe that they occur by diapedesis, and ascribes them to rupture of the capillaries.

In two of these four cases of idiopathic anæmia the bones were examined. In one there was no obvious change; but on microscopic examination numerous nucleated red corpuscles and microcytes were discovered. In the other, the marrow of the femur examined was of the colour of raspberry jelly; it showed a few minute red blood-corpuscles (microcytes) and many more of the large ones with nuclei described by Cohnheim, Osler and Gardner, and Rosenstein, beside abundant ordinary medullary leucocytes taking the place of the fat-cells of yellow marrow. These were also found in the blood taken in quantity after death, although during life no evidence of leuchæmia was afforded by examining a drop from the finger. By Welcker's method of allowing a quantity of blood to stand in a tall narrow glass, the slight coagulability which it possesses in these cases allows the formation of three layers by subsidence of serum, white corpuscles and red, and a judgment can thus be readily obtained of their relative proportion.



Professor Pepper, of Philadelphia, has published a paper subsequent to that mentioned by Dr. Lépine in the same journal (*American Journal of Medical Sciences*) for April 1877, on the relations of idiopathic anæmia (which he proposes to name anæmatosis) with Addison's disease of the adrenals. It contains no fresh cases, but is based on a comparison of the two of the former affection, reported above (p. 315), with a well-marked instance of the latter in a man aged 40 (reported in this RECORD, p. 274). The characteristic bronzing of the skin and constitutional symptoms are carefully described while the patient was under observation for more than four years. *Post mortem*, there was found the usual caseous affection of both adrenals, with a slight similar change in the apices of both lungs.

The likeness between the symptoms of the two diseases is less than Dr. Pepper supposes, and cannot outweigh the broad differences in their morbid anatomy. Even apart from the bronzing and the constant local lesion, the anæmia of morbus Addisonii is comparatively slight, the loss of flesh greater, hæmorrhages and pyrexia almost unknown, and phthisis or other caseous change in other organs than the adrenals exceedingly common. The chief connection between it and essential anæmia is the historical one that both were discovered by the same eminent pathologist, and his acumen is proved by the fact that the accuracy of his statements, like his labours in the pathology of pneumonia and of phthisis, is only now beginning to receive due recognition. Almost at the same time that Addison was separating the disease he called "suprarenal malasma", and that which he called "idiopathic anæmia" from the great group of chronic states of anæmia without previous hæmorrhage, the illustrious Virchow was establishing the existence of another natural pathological species of anæmia under the title "leuchæmia splenica". The form of anæmia associated with enlarged lymph-glands described by, and often named after, Dr. Hodgkin, is a much less distinctly marked "disease" than the other three. This anæmia lymphatica is occasionally a true leuchæmia lymphatica, though such cases are very rare. It is often associated with enlargement of other cytogenic organs, beside the glands, the tonsils, liver, or Peyer's patches, as in the case described by Béhier of "pseudo-leucémie intestinale"; and finally it has been found, as in some of the cases enumerated above, to depend upon overgrowth of the red marrow (anæmia medullaris *v.* myelogenica). The last cases, of anæmia without leuchæmia, associated with the changes in the marrow above described, are no doubt often undistinguishable during life from cases of idiopathic anæmia; but since, as we have seen, the marrow is unaffected in many of the latter, we must still consider the two as pathologically distinct.

P. H. PYE-SMITH.

#### CHARCOT, BURQ, REGNARD, AND OTHERS ON METALLOSCOPY AND METALLOTHERAPY.

THE metallotherapeutic method was invented by Dr. Burq more than twenty-five years ago, but met with little response from the profession, till about two years since it was made the subject of investigation and experiment by M. Charcot at the Salpêtrière. Dr. Burq's theory is that in certain nervous diseases plates of metal placed upon the skin have the property of altering general and special

sensation, and cutaneous vascular supply. The susceptibility of patients to the metals generally used—gold, silver, iron, copper, zinc—varies; a patient sensitive to one metal will be insensitive to another. When, however, it has been established by experiment to which metal the patient is susceptible, this is an indication, according to Dr. Burq's theory, that this metal is the therapeutical agent to be employed in the cure of the disease.

A great number of experiments have been made on hysterical patients at the Salpêtrière by M. Charcot, with the critical care and scientific acumen for which he is justly celebrated. He satisfied himself that Dr. Burq's statements were not chimeras; and a committee of three, consisting of M. Charcot, M. Luys, and M. Dumontpallier, was appointed by the Société de Biologie to investigate the subject; and a report was drawn up by M. Dumontpallier, embodying the result of their researches, and presented to the Société de Biologie on April 14th, 1877.\* An analysis of this report appeared in the *British Medical Journal* (May 19). The conclusions of the investigators which are set forth in the Report, are that, in hysterical and hemianæsthetic patients, if small pieces of metal, gold, copper, or iron, be fastened to a bandage and bound round the arm, leg, and forehead, and a piece of the same metal be placed in the mouth and on the mastoid process of the patient on the anæsthetic side, sensation will, after the space of about a quarter of an hour, return on that side; the formerly diminished cutaneous vascular supply will be increased; the muscular power will be augmented; the lowered temperature will rise; and the senses of hearing, sight, taste, and smell, which had been impaired or annulled, will regain their normal vigour. What, however, is gained on one side of the body is lost on the other in an almost exact ratio: as general and special sensation, muscular power, cutaneous circulation, return on the anæsthetic side, there is a proportionate and identical loss on the normal side of the body. In cases of hysterical and hemianæsthetic patients, these effects remain for about one or two hours, and then gradually fade; the power lost during the experiment on the normal or hyperæsthetic side are slowly regained as it is lost on the other, till the previous condition is re-established. In patients, however, in whom the anæsthesia is of organic origin, the effects produced are more or less permanent. As to the cause of the phenomena undoubtedly produced, Dr. Burq advances the theory that superficial currents of electricity are produced by the contact of the metal (which is an amalgam) with the moist skin, that slight oxydation takes place, and that an electric element is thus formed. He considers that these currents exercise an influence over the vaso-motor nerves, by means of which the blood-supply is restored to the anæmic parts and sensation re-established.† To this interpretation MM. Charcot, Rabuteau, and Onimus lean, but with some scientific doubt. This view has been strengthened by a series of experiments by M. Regnard, undertaken at the

\* Rapport fait à la Société de Biologie sur la metalloscopie du Dr. Burq au nom d'une commission composée de MM. Charcot, Luys, et Dumontpallier, rapporteur.

† Any one who has seen, as I have had the privilege of doing, a metalloscopic demonstration by M. Charcot, must have been struck by this change of blood-supply. Taking the precaution to previously blindfold the woman's eyes, M. Charcot will take a long thick steel pin and thrust it through the arm on the anæsthetic side, without eliciting a sign of pain or a drop of blood. A quarter of an hour after the bracelet of metal has been placed on the arm, a prick at the same spot will call forth a cry of pain and an involuntary start, and a puncture will cause the ordinary bleeding.

request of the commission. He found, that if plates of pure virgin gold were placed on an anæsthetic arm, the needle of a very sensitive galvanometer was deflected  $3^{\circ}$ , but if ordinary money were used the needle was deflected  $12^{\circ}$ . He went further, and substituted an electric current of a known strength for the metal. At the end of fifteen minutes the same phenomena as with the metal were observed, namely, itching creeping sensations, and finally the return of tactile sensation, accompanied with a reddening of the skin and an elevation of the temperature in zones corresponding to the electrical action. On applying one electrode to the forehead and another to the foot on the anæsthetic side, sensation returned from above downwards and from below upwards, sensation diminishing on the healthy side in a perfect, symmetrical manner. M. Regnard also observed that there are certain fixed points in the galvanometric scale, which are always the same for the same patient, at which sensation returns under the action of the current, whilst sensation does not return under the action of a current weaker or stronger, whatever may be the length of time the poles are applied. Thus he ascertained that patients sensitive to gold required a current deflecting the galvanometer  $2^{\circ}$  to  $12^{\circ}$ ; another sensitive to copper a force of from  $30^{\circ}$  to  $40^{\circ}$ ; and that the patients sensitive to currents of from  $35^{\circ}$  to  $40^{\circ}$  were not so to currents of from  $2^{\circ}$  to  $20^{\circ}$ . A patient also sensitive to a current of  $35^{\circ}$  to  $40^{\circ}$  was not influenced by one from  $50^{\circ}$  to  $70^{\circ}$ , but became sensitive again if the current were increased to  $90^{\circ}$ . Another, sensitive to a current of  $10^{\circ}$  to  $15^{\circ}$ , ceased to be affected by one of  $45^{\circ}$  to  $60^{\circ}$ , but recovered sensation under the action of a current from  $80^{\circ}$  to  $90^{\circ}$ .

By no means, however, the last word has been said on the subject. The assigned cause of the phenomena produced, and even the alleged phenomena themselves, are still the subject of discussion; the cause and the phenomena alike being denied by some who consider the changes of general and special sensation apparently witnessed to be but another instance of the artful cunning of means by which hysterical women have before been known to deceive accomplished physicians.

Dr. Clifford Allbutt, contending against this interpretation, draws attention in the *British Medical Journal* of November 3rd to the changes of capillary circulation that take place, and observes that these can scarcely be the result of deception. Possibly not of wilful deception; but the unconscious and rapid influence of the mind on the body, as is instanced in the well-known example of blushing, is one of the common places of physiology.

It is interesting to turn from the disputed points to the practical results of Dr. Burq's discovery, and to learn that M. Charcot has passed from the investigation of metalloscopy to that of metalloscopy. The four patients on whom metalloscopic experiments were made by the commission of the Société de Biologie, have been subjected by M. Charcot to the internal administration of the metal for which they had evinced a peculiar idiosyncrasy, and with in every case remarkable results. The following report of these experiments has been abstracted from the *Gazette des Hôpitaux* (No. 113, 1877).

Case I. M. had been eleven years at the Salpêtrière for an hysterical affection, which had resisted all methods of treatment. There was complete left hemianæsthesia. She was sensitive to gold. Treatment was commenced June 11th by the administration of 2 centigrammes (.3 grain) of chloride

of gold and sodium. On the 17th, muscular force had increased one quarter. On the 19th, sensation reappeared in the left arm. On the 21st there was a return of appetite, which had been absent, and the patient became voracious. On the 22nd, sensation was normal everywhere. On July 3rd the catamenia reappeared, having ceased for two years. There were no more hysterical attacks, or ovarian hyperæsthesia. On July 6th, she had gained 12lbs. in weight. Since this time the cure has been maintained, menstruation is regular, the patient gains in flesh, and sensation is perfectly normal.

CASE II. Angèle D. had been hysterical for five years, and blind since the age of 6 years from opacity of the cornea. She had left hemianæsthesia, and was sensitive to zinc and gold. Treatment was commenced June 30th. On July 3rd the hemianæsthesia commenced to disappear in the leg; her appetite increased. On the 10th general sensation was nearly re-established. On the 12th the catamenia re-appeared. At the end of July sensation became normal, and she has had no hysterical attacks since that period. The patient has gained in strength and flesh, and has received her discharge.

CASE III. Ba—, the subject of hysteria following on epilepsy, was anæsthetic on the right, analgesic simply on the left side, with contraction of the right leg; she was sensitive to gold. Treatment was commenced July 6th. On the 13th, there was return of tactile sensation in the whole of the right side. At the end of July, sensation became normal. Since this time Ba— has had no hysterical symptoms; she still continues, however, to have epileptic seizures.

CASE IV. Be—, hystero-epileptic, anæsthetic, and amyosthenic, had formerly an attack every month. She was sensitive to copper. This patient had been reserved to test the efficacy of external metalloscopy, and had been at first treated so by bracelets of copper. At first the sensation began to return, strength increased, and the catamenia were re-established; but at the end of some time the metal topically applied seemed to have lost all action, and the anæsthesia and amyosthenia returned as before. On June 15th internal treatment was commenced by the administration of pills of hydrated biniodide of copper, in doses, first of  $2\frac{1}{2}$  centigrammes ( $\frac{3}{8}$  of a grain), raised afterwards to 5 centigrammes ( $\frac{3}{4}$  of a grain), and half a glass of Saint-Christan water. Gradually the muscular force increased. On June 28th the power of pressure was 68lbs. on both the right and the left side. On July 3rd it was 80 on the right and 70 on the left, but the anæsthesia still persisted. The biniodide was therefore replaced by the albuminate of copper, and the dose was gradually raised to 10 centigrammes ( $1\frac{1}{2}$  grains) a day. Menstruation was regular, the strength was maintained, and on the 12th sensation began to return. A copper plate was then applied to the parts already slightly sensitive, and sensation was not long in returning. At this period the patient refused to allow the treatment to be continued; consequently the anæsthesia, amyosthenia, and hystero-epileptic attacks returned, and she became thin, weak, and sleepless. She was then induced to take two glasses of Saint-Christan water a day, and though this contains but 3 milligrammes (0.45 grain) of sulphate of copper per litre, she soon recovered sensation and muscular force.

In the *Progrès Médical* (No. 20, 1877) a case of MM. Landolt and Oulmont is reported, of recovery from hemianæsthesia of cerebral origin. This case is also alluded to in the Report.



R— suffered for 12 years with hemianæsthesia and posthemiplegic hemichorea on the right side, with loss also of special sensation. The usual metallic applications were made for many successive days, and were followed by a return of general and special sensation. It persisted, and at the end of three months had suffered no diminution; at the same time there was a simultaneous decrease of hemichorea. This case differs from the hysterical, in that there was no symmetrical anæsthesia, and in the persistence of the return of sensation. As a happy application of the research, a case is given in the Report of the Commission of the beneficial effect of feeble electric currents in acute hemi-hyperæsthesia.

Against these successes must be placed the failures. M. Magnan, at the Asile St. Anne, has been unable to obtain the results like those of M. Charcot. Dr. Westphal, of Berlin, has, it is stated, also failed.

ALICE M. HART.

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#### ROBERTS ON THE TREATMENT OF TRAUMATIC TETANUS BY HYDRATE OF CHLORAL.

DR. JOHN B. ROBERTS, of Philadelphia, observes in the *American Journal of Medical Science*, that the prognosis in traumatic tetanus may be looked upon as always unfavourable, for Gross says that the chances of effecting good "when the malady is fairly established are very slender in any case, however mild" (*System of Surgery*, vol. i, p. 644). In Holmes's *Surgery* this sentence occurs: "In acute traumatic cases the prognosis is most unfavourable, and there is scarcely a well-authenticated instance of recovery on record" (vol. i, p. 327). Such being the character of the disorder with which we have to grapple, it must be acknowledged that to a remedy under which several successive cases recover there must be accorded a certain modicum of honour. He continues:

Dr. J. R. Beck has collected (*St. Louis Medical and Surgical Journal*, June 1872) 36 cases of traumatic tetanus treated essentially by chloral, in which a recovery took place in 21 instances; while Dr. H. C. Wood has tabulated (*Treatise on Therapeutics*, pp. 292-293) 18 additional cases, resulting in nine recoveries and nine deaths. In the *Practitioner* for November 1872, Dr. Macnamara, of Calcutta, gives his experience in tetanus among the natives, and says that he treats them by giving forty grains of chloral at bedtime, and by providing proper diet of a nourishing kind. In severe cases, an additional thirty-grain dose is given at midday. Out of 20 successive cases 17 recovered. Though these cases were probably idiopathic in many instances, the testimony is nevertheless valuable. Within a few years the medical journals have been constantly reporting cases of recovery from tetanus under the use of chloral, but isolated cases have their value diminished because the fatal cases are not so likely to appear in print. Nevertheless the fact remains that many cases of traumatic tetanus have recovered while such treatment has been employed. The drug has been introduced into the system by various channels; M. Oré has treated cases of tetanus, though, I believe, unsuccessfully, by intravenous injections of hydrate of chloral (*Practitioner*, August 1877); while success has followed its administration hypodermically in acute traumatic tetanus (*American Journ. of Med. Sciences*, April 1877, p. 534), and it is stated that a case recovered where chloral in con-

junction with bromide of potassium was given by enema (*Hospital Gazette*, New York, April 1877, p. 15, from *London Lancet*). Dr. Agelastos, of Bucharest, believes that he prevents the occurrence of locked-jaw in traumatic cases by the timely employ of chloral (*New York Med. Journ.*, April 1877, p. 436). Verneuil says that chloral allays the muscular contractions, and especially those of the respiratory apparatus, which in the last stages of the disease cause asphyxia; and that it changes the acute into the chronic form of the disease. He gives instances of cure where the patients took 100 grains and 245 grains daily without any bad symptoms. The first of these tetanic patients recovered after thirty days, having been given 3vj of chloral during that space of time (*New York Med. Journ.*, 1876, p. 97). Hence it is seen that there is a good deal of evidence supporting the theory of the efficacy of this drug in the treatment of tetanus.

While having charge, as Resident Surgeon, of Dr. R. J. Levis's ward of the Pennsylvania Hospital, I had the care of four cases of traumatic tetanus, all of which were treated by Dr. Levis with hydrate of chloral; of this number three recovered, and one died. On looking over the Hospital Notes from April 1, 1873, to April 1, 1877, a period of four years, I find 19 cases of traumatic tetanus treated. Of these patients 16 died and three recovered, which were the three cases mentioned above as treated successfully by chloral.

Dr. Roberts gives a schedule of the cases, with an epitome of the treatment.

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#### POLLI ON THE ANTIFERMENTATIVE ACTION OF BORACIC ACID AND ITS APPLICATION IN THERAPEUTICS.

IN an essay read before the Lombardy Institute of Science and Literature, by Professor Polli of Milan (an abstract of which is published in the *Annali Universali di Medicina* for August), the author observes that the study of the processes of fermentation, aided by the progress of organic chemistry and the minute researches of microscopists, has caused a great advance in the researches into the means and agents capable of modifying, hindering, and arresting the phenomena of fermentation. Since his studies on the actions of sulphur, sulphurous acid, and the alkaline and earthly sulphites, which appeared to him to be the most certain antifermentative agents that could be tolerated by the animal organism, he has followed up all the others which have been from time to time discovered (*i.e.*—carbolic acid, silicate of soda, picric acid, salicylic acid, and boracic acid). Deferring the consideration of several of these agents, Dr. Polli for the present directs attention to boracic acid. He considers with Dumas (*Alcoholic Fermentation*, Paris, 1872) how some salts aid fermentation up to a certain point, such as bitartrate of potash, or at least allow it to run through its course without interruption; how other salts retard fermentation or render it incomplete, arresting the process when the liquid contains much sugar (bisulphite and hyposulphite of potash and soda, arseniate of potash, and borax); how often salts, finally, not only do not permit fermentation to be established, but prevent the decomposition of sugar (nitrate of potash, nitrate of soda, acetate of soda, chloride of sodium, sal ammoniac, cyanide of potassium, cyanide of mercury, and monosulphide of sodium).

In an appendix to the above-mentioned work, however, Dumas returns to the action which borax exercises on the fermentation of sugar under the influence of yeast, which, he says, deserves a special study, on account not only of the action of borax on yeast, but on the fermentative action of other substances analogous to diastase.

A solution of borate of soda coagulates the yeast of beer, and the supernatant fluid does not decompose cane-sugar, as watery solution of beer-yeast does. Solution of borax dissolves albuminoid membranes; those, for instance, which separate from egg-albumen when mixed with water. Dumas shewed that this solution neutralises the action of diluted yeast on sugar (alcoholic fermentation); the action of diastase on amygdalin, by which is produced essence of bitter almonds with prussic acid (amygdalic fermentation); the action of diastase, by which starch is transformed into dextrine and subsequently into glucose (diastasic fermentation); and the action of myrosine, by which the pungent essence of mustard is produced from mustard farina (sinapic fermentation).

Struck with the idea expressed by Dumas, that borax might exercise an influence on some animal poisons, Professor Polli imagined that it might have a great therapeutic application in those infective diseases, external and internal, which do not depend on the action of a living organised ferment capable of reproducing itself, as may be the case with contagious diseases, but which may be products of an organic substance acting chemically as a ferment, and analogous to diastase, synaptase, and myrosine.

Distinguishing, Professor Polli continues, by the name of living and organised ferment that which determines the transformation of sugar into alcohol and carbonic acid, of alcohol into aldehyde and acetic acid, of urea into carbonate of ammonia, etc., and applying the name of chemical or catalytic ferment to that which transforms starch into glucose, salicin into saligenin and glucose, sugar of milk into lactic acid, we may find in infective morbid agents an analogy sometimes with the first, sometimes with the second class of ferments. In the first category we will place scabies, variola, scarlatina, measles, syphilis, tinea, etc., and the efficient remedies for these will be the means which kill by chemical destruction, or which act as poison on the minute parasitic beings by which certain diseases are generated and diffused, such as monads, bacteria, vibrios, micrococci, etc. In the second class may be placed all the morbid products which act on the organism in a more or less rapidly deleterious manner, by the decompositions which they induce in some of its component solids or fluids.

In his researches on the actions of preparations of sulphur and on fermentative diseases, Polli had already commenced an investigation, the object of which was to discover what antifermentative agents could be administered to the animal organism in efficient doses without at the same time producing grave disturbance of the physiological functions. The sulphates were found to act in this way; and on investigating their *modus operandi*, he was led to conclude that they do not act as deoxidising or reducing agents, but rather by their power over the molecular aggregations of fermentable and decomposable organic matters, which they render more resistant to the ordinary agents of decomposition, among which the ferments take the first place.

In the hope that boracic acid and the alkaline borates would be found to possess a similar property, Professor Polli undertook a series of experiments on

vegetable and animal substances capable of fermentation and putrefaction.

He examined the action of boracic acid and of borate of soda on beer, on normal and diabetic human urine, on egg beaten up with water, on defibrinated ox's blood, on flesh, etc., and on entire bodies of small animals (birds, mice, etc.). At the same time, in nearly all instances, the effects were compared with those produced on the same substances by equal amounts of sulphite of soda, hyposulphite of soda, and sulphite of magnesia. The results were as follows.

Having exposed several small glasses of beer for thirteen days to the air at a temperature varying from 59 to 64° F., he found that in those in which boracic acid or borate of soda had been dissolved, the fluid remained clear and unchanged, while the pure beer had become acid, turbid, and covered with mould. Analogous results were obtained when milk was used instead of beer; as well as with healthy and diabetic human urine, with yolk of egg mixed with water, and with defibrinated blood. The last, when mixed with a solution of borate of soda, remain fluid, red, and inodorous for about a month, and presenting no bacteria under the microscope. As regards meats, the experiments of Herten were confirmed by Polli. For instance, a piece of the lean of pork soaked for twenty-four hours in a solution of boracic acid and borate of soda, and exposed to the air, did not present any sign of decomposition fifteen days later. The action of boracic acid and borate of soda is not yet well defined, but it appears probable that they act by catalysis.

As regards the sulphites and hyposulphites, employed simultaneously for the purpose of comparison, their antifermentative action was found to be inferior.

Regarding the therapeutic applications of boracic acid and borate of soda, it may be stated in general terms that they are useful in all internal and external processes of the organism which may be unattended by fermentesible agents. Boracic acid has been used by Capelli of Fregionara (in pulmonary diseases); Ottoni of Mantua (catarrhal cystitis); Ayre, Cane, Filippi, etc. Boracic acid and the alkaline borates are not oxidised by exposure to the air; when taken internally they do not remove oxygen from the organism, and are readily eliminated by the urine. The following are the formulæ ordinarily employed by Polli. *For external use:* R: Boracic acid, 2 grammes; water, 100 grammes; glycerine, 25 grammes. *For internal use:* R: Boracic acid, 2 grammes; water, 100 grammes; syrup of orange flowers, 16 grammes. A tablespoonful is taken every hour.

A. HENRY, M.D.

## AMORY ON THE SCIENTIFIC USE OF APERIENT MINERAL WATERS.

DR. ROBERT AMORY (*Boston Medical Journal*) summarises Dr. Rutherford and M. Vignal's most recent experiments on the action of saline cathartics on the liver, and applies them to the therapeutic use of aperient natural mineral waters now generally introduced into practice.

Sodium sulphate, sodium phosphate, probably by stimulating the hepatic cells, Rochelle salt (tartrate of potash and soda), have decidedly exciting influence in stimulating the flow of bile and increasing the amount of biliary matters; whilst magnesium sulphate, potassium sulphate, sodium chloride, so-



dium bicarbonate, potassium bicarbonate, and ammonium chloride, have little, if any, cholagogue action; and, moreover, magnesium sulphate diminishes the flow of bile. With regard to the cathartic action, these experiments show that sodium sulphate, magnesium sulphate, probably by excitation of the intestinal glands, potassium sulphate, and sodium chloride, have a decided purgative effect upon dogs, and the irritant action on the intestinal mucous surface, especially in the upper half of the small bowel, is most marked after the administration of magnesium sulphate. All of the above-named saline cathartics produced more or less irritation of mucous membrane of the small intestine, and yet the amount of purgation was not always in proportion to the *post mortem* vascularity of the mucous membrane, as, in the case of decided and watery purgation from sodium phosphate, the vascularity was only slightly increased above the normal appearance.

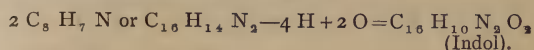
Now, Carlsbad water holds in solution a large amount of sodium sulphate. Magnesium sulphate and sodium sulphate are found in Hunyadi János bitter water in nearly equal parts, namely, about two hundred and twenty-five parts in ten thousand parts of the water. Püllna contains nearly as much sodium sulphate as the Hunyadi János, but only three-quarters as much magnesium sulphate. In Seidlitz water there is five-sevenths as much magnesium sulphate as the Hunyadi János, but no sodium sulphate. Friedrichshall contains less than one-quarter as much magnesium sulphate and more than one-third as much sodium sulphate. From this we can deduce the following results, provided the action on man is similar to that on dogs. When catharsis without biliary excitation is indicated, we may use Seidlitz water; when both are desired, we may use Hunyadi János water; when only biliary excitation is required, with very slight cathartic action, we may use Carlsbad water; both Püllna and Friedrichshall have more influence in exciting biliary secretion than simple catharsis.

## ANATOMY AND PHYSIOLOGY.

JAFFE ON THE PHYSIOLOGICAL AND PATHOLOGICAL EXCRETION OF INDICAN. — The method employed by Professor Jaffe (*Virchow's Archiv*, May 1877) is to add to 10 cent. of urine an equal quantity of hydrochloric acid, and then pour down with a narrow pipette one or two drops of a strong solution of chloride of lime; the indigo precipitates. This method of treatment colours the urine red or violet, from the action of the test on some unknown constituents. If indican be present, the colour is dark green or blue. Often the urine must be filtered, to collect the indigo precipitate. The quantity of indigo is not proportional to the vividness of the blue, as in the absence of the unknown constituents a small quantity may give a distinct colour, while in the presence of a large quantity of the same unknown substances a larger quantity of indigo might be hidden, especially if the necessary filtration were omitted. For the quantitative estimation, a measured quantity of urine must be treated as above, the precipitate collected on a filter, washed with hot and cold water, finally with hot ammonia, dried, and weighed.

He has investigated the sources of indican in men and in carnivora. In the herbivora it may have some other source, and in their diet there are many allied

substances. In men and the carnivora its dependence on the nature of the diet is unquestionable, and it appears to stand in direct relation to the nitrogenous principles. But it may also be formed from the albumen of the tissues, as he found it in the urine of starved animals, and notably in a case of carcinoma of the œsophagus. It is well known that A. Baeyer found in *feces* a substance which he called indol, with the formula  $C^8, H^7, N$ , a product of the pancreatic digestion; and Professor Jaffe finds that injections of a watery solution of this substance under the skin of dogs, whose urine was ascertained to be free from indican, were followed by the appearance of indican in that secretion. The oxidation process he represents by the following equation.



Moreover, Nencki has succeeded in artificially oxidising indol to indigo by ozonised air. Besides, he has isolated the substance described by Baeyer, and proved its identity with indol. Hüfner and Kühne have pointed out that the pancreatic ferment cannot produce indol from albumen, except in the presence of bacteria, so that it is really a product of putrefaction; but this, we know, may take place in the alimentary canal, and we know that the pancreas is, as Tiegel showed, the principal seat of bacteria in the living body, so that it can scarcely be doubted that the alimentary canal is the seat of the formation of indol in man and the carnivora, and that this is the source of the indican found in the urine. But is it the only source? Koukol-Yasuopolski has shown that indol may be formed in the liver and the muscles by a true putrefactive process, although they are shut off from the rest of the body. Jaffe observed an enormous quantity of indican in the urine of a case of ileus, and at first thought it was a pathognomonic sign of obstruction of the bowels, explaining it by the supposition that the greater quantity of indol, under normal conditions, passes off in the stools; but unfortunately in another case with the same symptoms there was no such appearance, and it is always absent in chronic constipation. He strove to solve this question by experiments on dogs, and found invariably that ligature of the small intestines was followed by the appearance of indican, while ligature of the great intestine was not. The increase was greater than could be accounted for by mere re-absorption, and he believes there was increased formation. In reference to the influence of fever on the production of indigo, he found no increase in croupous pneumonia, recurrent fever, or acute rheumatism, although he repeatedly searched for it; but it was present in fevers with intestinal complications, enteric fever, gastrointestinal catarrh, or diarrhoea, supervening in acute or chronic febrile diseases; he therefore concludes that fever, as such, is without influence on the production of indigo. He refers to Fraenkel's observation of an increase of indican under diminished absorption of oxygen into the system, and he regrets that he cannot add any information on this point. Going back to the origin of the increase of indigo in his dogs, he concludes that it was in the intestine, because it was shown to be entirely dependent upon the nature of the food previously eaten, animals which had received food poor in nitrogen showing no increase. He thinks the results of his experiments are easily explained. Obstruction in the small intestine leads to the stagnation of a large quantity of partially digested albuminous matter, in which the indol-forming putrefaction-process may go on with

great facility, but the large intestine contains only the waste of the food, and its contents are less watery. Still, in a case of chronic obstruction of the colon, it might easily happen that the retention might be so great that stagnation would occur in the ileum, and an increase of indigo result. In acute diffuse peritonitis the amount of indigo is increased, from the cessation of the peristaltic action of the bowels, etc.; but when purulent peritonitis attacked his dogs, no increase occurred. This he cannot explain at present. In circumscribed peritonitis and in carcinoma of the peritoneum in man no increase of indigo took place. In reply to the question whether by examination of the urine an obstruction of the bowel can be localised, he says that the frequency of peritonitis and other complications, which may secondarily affect the small intestine, renders it very doubtful. He thinks the absence of indigo in a case of ileus would exclude diffuse peritonitis, but questions whether it would exclude a disease localised in the small intestine.

EICHHORST ON THE INFLUENCE OF IMPEDED RESPIRATION ON THE NITROGENOUS MATTER OF THE URINE IN MAN.—Dr. H. Eichhorst (Virchow's *Archiv*, May 1877) says that it had long been accepted that nutrition and tissue-waste was a sort of combustion-process, of which urea was the chief product, and generally it was held that the formation of urea was directly proportional to oxygen absorbed into the blood; in fact, urea was a product of oxidation. But Fraenkel's investigations seemed to contradict all this, and his experiments on dogs led him to assert that a decrease of the oxygen absorbed was followed by a rise in the urea excreted. He has endeavoured to test Fraenkel's conclusion by the bedside; and in four cases of asphyxia, three from croup and one from pneumonia, the quantity of urea and the amount of water both diminished in proportion to the increase of the obstruction to respiration. He gives details of these cases and tables of the analysis of their urine. He shows in the first three cases that after tracheotomy there was a rise in the quantities of urine and urea, followed by a gradual decline as the disease extended into the lungs, while the secretion ceased altogether some hours before death. He argues that the result obtained by Fraenkel was not a relative increase in the urea, but proportionally to the increase of urine a relative decrease; moreover, he says Fraenkel states that during the artificial dyspnoea the secretion of urine stopped in two cases, and that the increase on the days in which the dyspnoea had been produced was due, not to the dyspnoea, but to the sudden subsequent free respiration. He is of opinion, therefore, that the old views of the relation of oxygen to urea may be maintained.

ROBERT SAUNDBY, M.D.

WISSOSKY ON EOSINE AS A REACTIVE OF HÆMAGLOBIN, AND ON THE DEVELOPMENT OF THE CAPILLARIES.—Wissosky (*Archiv für Mikrosk. Anat.*, Oct. 1876) has found that eosine, used in the proportion of eosine 1, alum 1, and alcohol 200, is a special reactive of hæmaglobin, and produces an orange-red tint. In the nucleated corpuscles of the amphibia, the reaction is very marked; the cellular body being coloured, the nucleus remaining intact. The white blood-corpuscles are not influenced by eosine. If eosine and hæmatoxyline be used together, the cell-substance is coloured orange-red, and the nucleus intense violet.

To study the development of the capillaries, M. Wissosky employed the membranes of the ovum of

the rabbit. The hæmatoblasts are of two kinds—small round cells, 0.00012 to 0.0006 inch in diameter, with a single nucleus; and large cells, presenting many nuclei, lamellæ, and ramified processes, which anastomose and form an irregular network. At an advanced period of development, these anastomotic fibres form a network of protoplasmic cylinders, sprinkled with nuclei. Wissosky considers that these cells have amœboid movements. After a time he observes that a segment of this network takes the red tint of hæmaglobin, and is transformed into a red blood-corpuscle. When a few of these corpuscles are collected together, the intervening substance melts down, and by the union of many of these spaces, the lumen of a capillary is formed; the encircling protoplasmic tube then takes the character of a vascular wall.

ALICE M. HART.

LUSSANA AND CIOTTO ON THE PNEUMOGASTRIC NERVES.—In an article in the *Gazzetta Medica Italiana* for June, Professors F. Lussana and F. Ciotto describe the results of an experiment, in which they divided both pneumogastric nerves in a dog, the animal surviving for eighteen days, during which careful observations were made.

With regard to the respiration, the only phenomena observed were slowness, depth, and aphonia. On the other hand, there was no sign of suffocation; which would indicate that the vagi are not necessary for the maintenance of respiration, although they modify the respiratory movements. There was no hyperæmia nor atelectasis of the lungs. This would lead to the belief that the vaso-motor nerve-supply of the bronchi and lungs is independent of the vagi, or, at least, that it is partly derived from the sympathetic. Neither pulmonary emphysema nor bronchial catarrh was present; hence, while the share of the vagus in the innervation of the muscular fibres of the pulmonary vessels cannot be excluded, a weakened respiration is necessary for the production of catarrh or emphysema. The absence of any alimentary matter in the respiratory passages tends to show that the hypothesis of Traube is incorrect, which ascribes death solely to the entrance of food into the air-tubes.

The symptoms manifested by the circulatory organs were not in agreement with the opinion that the pneumogastric is a motor nerve of the heart. The circulation was accelerated, but the blood-pressure and the cardiac impulse remained normal.

The digestive process was affected both chemically and mechanically. The œsophagus and stomach were paralysed. The amount of bile was increased, but on boiling the liver no glucose was obtained; while in the liver of a healthy dog, treated in the same way at the same interval after death, glucose was found. From this the authors conclude that glucose is a product of the functional activity of the liver, in accordance with Bernard's theory.

A. HENRY, M.D.

BOETTCHER ON THE STRUCTURAL RELATIONS OF RED BLOOD-CORPUSCLES.—The *Quarterly Journal of Micros. Science* contains an article by Professor Boettcher, which originally appeared in the *Archiv für Microscopische Anatomie* (Band xiv). It appears conclusively to establish the presence of a nucleus in the red corpuscles of Mammalia. By a new method of treatment—that of pouring defibrinated blood into an alcoholic solution of corrosive sublimate—the red corpuscles are deprived of their hæmatin, whilst the albuminous body combined with



the colouring matter remains undissolved. The corpuscles thus decolorised are most suitable for examination of their internal structure, and may be advantageously stained by carmine or other dyes. After a full description of the various forms assumed by the red corpuscles under this treatment, it is shown that there is every reason to believe that a red corpuscle consists of three distinct parts; (a) a bright homogeneous cortical layer; (b) a granular protoplasm; and (c) a clear nucleus within the latter, containing a bright nucleolus. The protoplasm surrounding the nucleus is frequently found mulberry-shaped, beset with small papillæ or drawn out into delicate processes. The red blood-corpuscle of the camel exhibits the same structure, but no processes are given off from the protoplasm. The nucleus has not before been recognised in the red corpuscle of the camel, and this is shown to have been due to the comparatively thick and highly refractive cortical layer impeding observation—in fact, the solution of corrosive sublimate is absolutely necessary to identify their structure with those in man. Boettcher considers these facts incompatible with Rollett's doctrine of the existence of the "stroma", which is now seen to be but a residue of the colourless part of the corpuscle remaining after dissolution of the original structural relations, and is therefore an artificial product. Spontaneous locomotion is not an attribute of these corpuscles, and their changes in form are by no means identical with the amoeboid movements of the colourless corpuscles. The filamentous and nodular projections from the granular protoplasm around the nucleus may suggest, however, the possibility of retention of mobile power, even after the formation of the non-contractile homogeneous cortex which envelops it. Boettcher regards the hæmoglobine envelope as resulting from the direct transformation of the protoplasm. Boettcher's results appear conclusive, and have the merit of establishing, as far as was possible anatomically, the developmental connection between the red and colourless blood-corpuscles.

BEVAN LEWIS.

#### RECENT PAPERS.

- On the Effects produced on the Heart by Direct Stimulation with the Interrupted Induction-Current. By C. H. Hildebrand. (*Nordiskt Medicinskt Arkiv*, Band IX.)
- On the Choroid of Rabbits. By K. Hållstén and R. Tigerstedt. (*Ibid.*)
- The Deep Convolutions of the Human Brain and the Bridging-over of the Central Fissure. By Dr. Heschl. (*Wiener Med. Wochenschrift*, October 13.)
- Hermaphroditism in an Adult. By Dr. F. Schauta. (*Ibid.*, October 20 and 27.)
- On Patency of the Foetal Vessels. By Dr. P. Baumgarten. (*Centralblatt für die Medicin. Wissenschaften*, October 6 and 13.)
- On the Lymphatics of Human Serous Membranes. By Dr. G. Bizzozero and Dr. G. Salvioli. (*Ibid.*, October 20 and 27.)

#### MEDICINE.

BERNHARDT ON A PECULIAR CASE OF BRAIN-DISEASE (HEMIPARÆSTHESIA SINISTRA, HEMI-ANOPSIA DEXTRA).—This interesting case is described in the *Berliner Klinische Wochenschrift* for October 1st.

A. K., a letter-carrier, aged 40, had enjoyed good health until the 1st of April last, on which day, while at stool, he was seized with a peculiar sensation, as if the whole of his left side no longer belonged to him. He had to be taken to bed. For a few hours only his speech was affected, but on the evening of the same day his articulation was quite natural,

though he was mentally confused, did not know where he was, and complained for the first time, of headache. During the next month the condition of the patient was as follows. On the day after the seizure he was able to move his left limbs pretty freely; indeed, it is doubtful whether at any time there was any motor paralysis of the affected side; the patient continued to complain that he did not know where his left arm and foot were. The general headache passed off towards the end of the month, but the memory of his previous life and the ability to find his way in the street returned only very slowly.

In July, A. K. could take long walks without fatigue, his speech remained unaffected, and his gait good; the left arm could also be moved freely without any sign of ataxy. Sensation, however, was still greatly affected. The patient felt as if a layer of foreign matter were constantly between the finger-joints of the left hand; the whole upper extremity, neck, chest, and abdomen on the left side felt as if asleep; when the arm hung by the side it seemed to the patient as if all the blood sank down to the finger-ends, and the other contents of the arm had all gravitated into the hand; the entire left leg felt as if swollen, and his really very easy boot felt uncomfortably tight; the characteristic sensation as of foreign matter still existed on the left side of the head and face, including the mucous membranes. Ordinary sensation to touch, differences of temperature, the prick of a needle or a painful electric shock, remained perfect, and no difference could be detected between the two sides. The patient could recognise the objects placed in his hand by the sense of touch alone, and by the same means he could tell where his left limbs had been moved to while his eyes were closed. Only in the skin of the left side of the face was objective sensation somewhat duller than on the right side. The tongue was protruded without trembling almost straight, but turned perhaps very slightly towards the left. The patient had no headache, he swallowed and articulated well, smelt, saw, heard, and tasted as well on the left as on the right side. The eyes were equally wide open, freely movable and without squint; the pupils were of moderate size, and reacted equally well to the stimulus of light. The fundus of each eye, examined ophthalmoscopically, appeared perfectly normal.

Since May the patient had frequently complained that he ran up against people in the street who were on his right side; he was also often startled when persons or other large objects entered suddenly into his field of vision from his right side, owing to his not having previously noticed them. If the patient fixed either eye separately, or both together, upon a certain object, and if then a second object were moved from above, below, or the left side into his field of vision, he could at once recognise it; but if ever so large an object were moved from the right towards the central point, A. K. did not see it at all until it came in front of and hid the object on which his eyes were already fixed. Reading was difficult to the patient, as he lost the line he was reading, and could not see the whole of a long word at one time; the same difficulties troubled him in writing, and he had always to turn his head to the right. An object moved from left to right across the patient's field of vision remained in sight for some little distance after it had passed the central point, and was still seen at a spot where an object coming from the right would not have been noticed. No further evidence of disease or abnormality could be detected in the patient by the most careful physical examination.

Dr. Bernhardt proceeds to discuss the case as follows. The patient's condition is owing to some sudden change within the cranium. The nature of this change it is hardly possible to decide. The only circumstance which gives any indication that way is the fact of the apoplectiform attack having occurred during defæcation, at which time the increased intracranial pressure may have caused a small vein to give way, and thus given rise to hæmorrhage. A still more difficult question to answer is, "What parts of the brain are affected by this sudden lesion?" In view of the paræsthesia of the left side, the ordinary rules of pathology point to the right hemisphere as containing the seat of lesion; the supposition that the latter is situate in the posterior part of the inner capsule seems to offer the best explanation of the various symptoms of the case. It is possible that parts of the optic thalamus or cortical substance of the hemisphere are involved, but it is impossible to make a certain diagnosis in the present case; the only certainty being apparently that some change has taken place within the right cerebral hemisphere.

Thus far there would be nothing very unusual in the case, but the coexistence of right "hemianopsia" lends great interest to it. According to what is now known of the course of the fibres of the optic nerves, the loss of function of the outer half of the left and the inner half of the right eye can only be explained by a morbid affection of the left tractus opticus. Thus in the present case we should have to suppose there were two seats of lesion in the brain, one on each side. All the symptoms of the present case could be explained as arising from a single lesion if we suppose that in this patient the crossing of the left pyramid-fibres in the medulla oblongata does not take place. Flechsig has shown that the decussation at the pyramids may (at any rate in great part) be absent, so that an injury to one-half of the cerebrum may cause paralysis on the same side. Whatever may be the truth in the present case, Dr. Bernhardt considers that the concurrence of the two symptoms, at first sight irreconcilable, of left hemiparæsthesia and right hemianopsia, is of sufficient interest to justify him in publishing the case with the request that special attention may be given to any similar cases, especially if an opportunity for a *post mortem* examination should arise.

CHAS. S. W. COBBOLD, M.D.

**GUBLER ON PERITONISM AND ITS RATIONAL TREATMENT.**—Under the title of peritonism, Professor Gubler studies (*Journal de Thérapeutique*, No. 20, 1876, and Nos. 2, 3, 4, 5, 6, 1877) the multiple symptoms resulting from troubles of the peritoneum. The conclusions of his memoir are as follows:

1. The serious complications of abdominal lesions attributed to peritonitis, do not really belong to that phlegmasia. They are sometimes absent in the most intense inflammations, and sometimes appear without any notable inflammation of the serous membrane of the abdomen.

2. The course of symptoms, superadded to traumatic or spontaneous lesions of the abdomen, consists of sympathetic or reflex disturbances of the great functions of circulation and hæmatisis. I have given it the name of peritonism, so as to express its nervous character, and to show its independent nature in relation to peritoneal phlegmasia.

3. The contingent character of these accidents, the unenviable privilege of their possession, inflicted on the human race, compared with the relative im-

munity of the animal species, all these circumstances combine to show that the development of peritonism is due to excessive impressionability as well as to exaggerated reaction of the sympathetic nervous system in particular races or predisposed individuals.

4. Hence it may be hoped that, by diminishing this susceptibility, and restraining the reflex actions which result from it, patients will be placed in conditions favourable to the regular evolution of the local morbid process, without running the risk of the advent of general complications which frequently cannot be arrested. Here, perhaps, more than in any other case, prevention is better than cure.

5. It is, therefore, important in the course of primarily local affections, as well as in the abdominal localisations of general diseases, to follow with an attentive eye the rise and progress of the lesion, so as to intervene in time to prevent the development of sympathetic complications. This care is particularly demanded in cases of typhoid fever, with deep ulceration of the ileum, involving Peyer's patches, in those of intense typhilitis and perityphilitis, of suppurative hepatitis, inflammation of the gall-bladder, of simple or cancerous ulcers of the alimentary canal, of acute inflammations of ovarian or other cysts, of circumscribed metro-peritonitis or peritonitis having a tendency to suppurate.

6. So soon as the phlegmasia, having become intense, arouses an acute sensibility of the belly, with distension of the region, in consequence of muscular atony of the intestine, and gives rise to indications of repercussion over the whole ganglionic system, the medical man should intervene with the view of assuring the tolerance of the nervous system, of reducing the impressionability of the trisplanchnic nerves, and the reactions of the reflex centres, and of lowering the exquisite nervousness of the human race to the level of that of the animal types immediately below it.

7. Such means undoubtedly exist in our therapeutic arsenal. The large class of nervines offers us various kinds, on the efficacy of which clinical experience has already given judgment; such are narcotics, and above all opium, as well as the diffusible stimulants, amongst which alcohol holds the first place.

8. Anæsthetics, however, principally ether and chloroform, play a considerable part in the prophylaxis of peritonism, where foreseen and intended lesions are in question, that is to say, surgical operations on the abdominal organs. Not only is ovariectomy rendered easier by prolonged anæsthesia, but the success of this great operation is scarcely possible except on this condition.

**HEIDENHAIN ON THE ETIOLOGY OF PNEUMONIA.**—Dr. Bernhard Heidenhain (*Virchow's Archiv*, August 1877) refers to the question debated of late years as to whether pneumonia is an infectious disease or not. He thinks it is evident that if the disease can be produced by a non-specific irritant, the infection theory must fall. He first experimented by making animals breathe very hot air for fifteen minutes, thirty minutes, or longer; they died after three, five, or seven days, and their lungs were perfectly healthy. He then tried the opposite experiment with cold air, and here also got a negative result. During the experiment on one animal, the blood-pressure in the carotid and the temperature in the rectum were observed, and found to be not affected in any noteworthy manner. He next made use of an apparatus by which the bulb of a long



thermometer was inserted down as far as the bifurcation of the trachea, so as to be able to determine the actual temperature of the air received by the lungs. He found that dry air at any temperature remained innocuous. On the other hand, steam produced catarrhal inflammation of the air passages and air cells, if heated up to 55 C. (131 deg. F.), and the same result occurred with vinegar vapour. Other chemical agents (chlorine, fuming nitric acid, etc.) killed the animals, but left the lungs healthy. But he admits that the characters of the anatomical changes, whether they extended to a part or the whole of a lobe, were never those of croupous pneumonia, but were primarily affections of the trachea and bronchi, the lung-affection being secondary, and resembled the catarrhal pneumonia or broncho-pneumonia of human pathology. He concludes therefore that croupous pneumonia requires a specific agent for its production.

VON WIDMANN ON SYSTOLIC RETRACTION OF THE INTERCOSTAL SPACES.—Dr. O. Von Widmann (*Virchow's Archiv*, July 1877) writes that, while undoubtedly systolic retraction of the intercostal spaces has been often noticed when there were partial or complete adhesions of the heart and pericardium with the pericardial pleura to the costal pleura, it is also equally certain that these latter have in some cases been absent; and further that, when present, no retraction of the intercostal spaces has sometimes been observed. He regards as most important for the explanation of these phenomena, the change in the axis of the heart's longest diameter during systole, namely, the shortening of the right-to-left diameter. He says the systolic retraction proves only (basing ourselves on the results of physiological investigations of the changes of shape and position which occur in the organ during systole) that the heart lies in an anomalous position, and chiefly that it is twisted so as to lie, instead of with its anterior surface forwards, with one of its lateral surfaces towards the thoracic wall, or, in other words, that it is turned round on its long axis, in which position it may or may not be fixed by adhesions.

During systole, the heart undergoes a diminution of its right to left diameter; if now one of these sides be in contact with the thoracic wall, it will be withdrawn during systole, and in consequence the atmospheric pressure will force in the intercostal spaces. But in spite of this twisting of the heart, these consequences may be prevented by emphysema of the lungs, as collections of air in the pleural sac, if the heart be not hypertrophied, if its movements be very feeble, or the intercostal spaces narrow, and the thorax very unyielding, etc.; that is, when the forming elements, retraction of the left lung, hypertrophy of the heart, strong cardiac movements, etc., are absent.

BABESIU ON A CASE OF OBSTRUCTION OF THE BOWELS BY A DISLOCATED SPLEEN.—Dr. Victor Babesiu of Pesth (*Allgem. Wiener Med. Zeitung*, Sept. 1877), publishes a remarkable case of a woman, aged 30, who was admitted on the 10th of August with stercoraceous vomiting, and other symptoms of intestinal obstruction, which were quickly followed by collapse, and death occurred on the 13th. The spleen, which was not enlarged, lay in the left inguinal region, parallel to Poupart's ligament, and was adherent by bands of connective tissue to the groin, the rectum, the spinal column, the coils of the ileum, the great omentum, the sigmoid flexure, and the brim of the pelvis, the uterus, and with the Fallopian tubes

and ovaries on both sides. Its under surface formed with Douglas's space a cavity which was filled with ichor, and the walls of which were rotten, and covered with dirty brown false membranes. The gastro-splenic omentum was stretched into a cord about as thick as the little finger, seven centimetres long; the splenic vessels were obliterated. The spleen itself was gangrenous. A loop of jejunum was constricted between this ligamentous band and the spinal column.

BERGER ON VERTIGO A STOMACHO LÆSO.—Dr. Berger (*Deutsche Zeitschrift für die Prakt. Medizin*, August 1877) relates a case of vertigo of this kind which simulated serious brain-disease. The patient, a medical man, was affected by sudden intense vertigo which completely disappeared on lying down quietly, but any active or passive movement of the body made him giddy and ready to fall. Locomotion had become quite impossible. From the absence of any other cerebral symptoms (there was only a very lively increase of reflex excitability) and on investigation the discovery of a loaded tongue, decided dyspepsia, antecedent frequent vomitings, slight icterus of the conjunctiva, and on one occasion the presence of a trace of bile-pigment in the urine, vertigo a stomacho læso was diagnosed. Appropriate treatment (rhubarb and soda) quickly improved him, but a tendency to vertigo persisted for some time.

R. SAUNDBY, M.D.

EICHHORST ON A CASE OF RUPTURE OF THE GALL-BLADDER.—In the Berlin *Charité-Annalen*, 1877, vol. ii, Eichhorst describes the case of a woman aged 62, who, after having suffered several times from gall-stones and jaundice, observed for some time a dark green colouring of the skin in the right hypochondrium. As this increased in extent, she was admitted into hospital, where necrosis of the skin was found to extend over a space limited by the lower border of the ribs, the middle line, the right Poupart's ligament, and the axillary line. Sensation was completely lost. In a circumscribed spot, corresponding with the region of the gall-bladder, there were fluctuation and tenderness. On the day after her admission, the skin over this part burst, and a hundred cubic centimetres of bile escaped, partly spontaneously and partly on pressure. A probe passed into a cavity with smooth yielding walls, which appeared irregular only above. After the removal of the necrosed abdominal wall, the fascia of the muscles was exposed as if dissected. There was no icterus; the faeces were brimstone-coloured; the urine was free from biliary colouring matter. In the course of three weeks, the fistulous opening gradually closed; and almost at the same time the sclerotic, and very soon the abdominal wall, became jaundiced. The urine and faeces remained permanently free from biliary colouring matter. Some days later, the wound assumed a diphtheritic appearance, the sensorium became affected, coma ensued, and the patient died. The amount of bile discharged through the fistula on each day after the first, averaged 18.6 cubic centimetres, never exceeding 25 cubic centimetres. On *post mortem* examination, the cæcum and transverse colon were found adherent to the right half of the abdominal wall. The fistulous passage showed during life led into a cavity as large as a hen's egg, lying beneath the gall-bladder, and bounded by false membranes deposited about the gall-bladder and liver. This cavity communicated by an opening of the size of a pea

with the gall-bladder, which was full of gall-stones. The bile-ducts both within and outside the liver were much dilated. There were multiple abscesses in the liver, and medullary cancer of the duodenum at the entrance of the ductus choledochus.

The discharge of the bile into the peritoneal cavity without causing pain, is interesting, as is also the small quantity of bile that was discharged daily. This quantity—which never exceeded twenty-five cubic centimetres—represented nearly the total amount of bile excreted, since (as examination of the urine and feces proved) none of it was absorbed or passed into the intestine. Eichhorst used this case for making experiments on the absorption into the bile of salicylic acid, sugar, and muriate of quinine; none of these were excreted with the bile, but were found in the urine. The result was the same, whether they were given by the mouth or by enema. A. HENRY, M.D.

### RECENT PAPERS.

- On Tænia, Echinococci, and Bothriocephali of the Human Subject. By M. Laboulbène. (*L'Union Médicale*, September 27.)
- Albuminous Nephritis with Uræmic Symptoms. By M. Hardy. (*Gazette des Hôpitaux*, September 27.)
- On Disinfection by Hot-Air. By Dr. Vallin. (*Bulletin de la Société de Médecine Publique*, No. 1, June and July, 1877.)
- On an Epidemic of Lead-Poisoning. By Dr. Ducamp. (*Ibid.*)
- Two very Rare Complications of Asthenic Gout. By M. Potain. (*Revue de Thérapeutique Médico-Chirurgicale*, November 1.)
- On Purulent Urine. By Dr. C. Ferrant. (*Ibid.*)
- Hydatid Cyst of the Liver Twice Emptied by Means of the Aspirator, and Cured Spontaneously by Rupture and Evacuation into the Stomach. By Dr. Gérin-Roze. (*Ibid.*, October 25.)
- On the Relative Contagiousness of Measles and Scarlatina. By Dr. Adolphe Dumas. (*Montpellier Médical*, October 1877.)
- On the Semeiotic Value of Decubitus in Pulmonary Phthisis. By Dr. Chalot. (*Ibid.*)
- On the Pathogenesis of Spontaneous Aneurism of the Thoracic Aorta. By Dr. C. Verstraeten. (*Bulletin de la Société de Médecine de Gand*, September 1877.)
- Contribution to the Study of Cerebral Localisations. By P. Bernheim. (*Revue Médicale de l'Est*, October 15.)
- On the Treatment of Valvular Disease of the Heart in the Third Stage. By M. Hardy. (*Gazette des Hôpitaux*, October 18.)
- On the Complications of Typhoid Fever in Treatment by Cold Baths, and the Usual Modes of Treatment. By Dr. Libermann. (*L'Union Médicale*, October 20.)
- On Some Nervous Complications in Phthisical Patients. By Dr. Michel Peter. (*Ibid.*, Oct. 23.)
- The Pulse in Croupous Pneumonia. By Dr. E. Bardenheuer. (*Berliner Klin. Wochenschrift*, October 8.)
- On Dyspepsia in Typhus. By Dr. R. von den Velden. (*Ibid.*, October 15.)
- Against the Doctrine of the Pulsus Paradoxus. By Dr. J. Sommerbrodt. (*Ibid.*, October 15.)
- On Cysts of the Epiglottis. By Dr. Beschorner. (*Ibid.*, October 15.)
- A Case of Echinococcus of the Liver with Symptoms of Hepatic Colic. By R. Westerdyk. (*Ibid.*, October 22.)
- A Case of Echinococcus of the Spleen, with Remarks on Diagnosis. By Dr. A. Kühn. (*Ibid.*, October 22.)
- A Contribution to the Question of Infection of Typhus. By Dr. Gontermann. (*Ibid.*, October 22.)
- Cases from the General Hospital at Hamburg: 1. Left Spinal Hemiplegia; 2. Intussusception with a Chronic Course. By Dr. Gläser. (*Ibid.*, November 5.)
- Thoracentesis: Rapid Cure of Copious Pleuritic Exudation in a Woman the subject of Cypho-Scoliosis: Value of the Operation in the Acute Stage of Pleurisy. By Dr. G. Ballotta. (*Lo Sperimentale*, October, 1877.)
- A Contribution to the History of Progressive Pernicious Anæmia. By Dr. S. T. Sörensen. (*Nordiskt Medicinskt Arkiv*, Band LX.)

### SURGERY.

BILLROTH ON GASTRORAPHY.—In the thirty-eighth number of the *Wiener Medizinische Wochenschrift*, 1877, Professor Billroth reports the further treatment in a case of external gastric fistula, that had been previously described by Dr. A. Wölfler in the *Archiv für Klinische Chirurgie*, Bd. 20, page 577. This case was one of a gastric fistula,

involving the abdominal wall, in a female aged 25 years. The condition in question had resulted from a chronic abscess over the lower ribs, which, after adhesion of the stomach to the diaphragm and the anterior wall of the abdomen, had perforated this viscus, and, at the same time, discharged its contents externally. Professor Billroth at first closed the orifice, which was of the size of a silver gulden piece, by a granulating flap. This was done with the expectation that the flap would still resist the digestive action of the gastric juice, after the granulating and vascular surface, directed towards the interior of the stomach, had, in course of time, acquired an epithelial covering, and a cicatricial and consequently less vascular condition. This expectation was based on the fact that one occasionally meets with in the stomach as results of gastric ulcer, large cicatrices, ulcers which are depressed below the surface of the mucous membrane, and contain much finer and smaller vessels. This supposition, however, was not confirmed. About three months after the operation the fistula opened again, and to the same extent as previously, in consequence of digestion of the flap of skin by which its orifice had been covered. At the period of her re-admission into the Vienna Hospital, the patient was wearing a small plug, retained by a broad bandage. This closed the orifice of the fistula very well, and prevented any flow of the contents of the stomach whilst the patient was recumbent. It was found impossible, however, to prevent a continuous discharge of gastric fluids while she was standing and at work. The patient had lost flesh; the margins of the external orifice of the fistula were constantly inflamed and tender; and the general condition had become so intolerable, that there was an eager desire for some other attempt to bring about complete healing, even though this might be attended with some risk.

The first two attempts to bring about occlusion, or, at least, considerable contraction of the fistulous orifice, proved unsuccessful. In one, it was sought to produce obliteration by converting, through cauterisation, the mucous surfaces of the fistula into a cone of cicatricial tissue. In the other, the mucous membrane was separated from the muscular layer of the gastric wall at the seat of the fistula, and this latter layer, together with the serous, was dissected away from the abdominal wall for about the extent from the margin of the fistula, an attempt being made during the cicatrization of the superficial parts to thrust inwards towards the cavity of the stomach the detached flap of mucous membrane. The cause of the failure in each of these proceedings is stated to have been the extensive adhesion of the surface of the stomach to the anterior abdominal wall. In a third operation the orifice of the fistula was covered by a large flap, taken from the front of the thorax; the lower margin of this flap being fixed by sutures to the vivified lower margin of the orifice. This proceeding also failed, in consequence of almost complete destruction of the flap, through the digestive action of the gastric juice.

Professor Billroth finally performed the following operation for gastroraphy. After the stomach had been thoroughly cleansed by repeated injections of water, the adherent mucous and other coats of this viscus were, by means of the finger and a raspatory, separated from the inner surface of the anterior wall of the abdomen. The adhesions were very extensive, and so firm as to necessitate for this breaking down considerable force. After this proceeding, the stomach could be drawn forwards to such an extent



that it was possible, by means of fine silk sutures passed through the serous and muscular coats, to bring the margins of the abnormal gastric opening together. The orifice in the skin was then closed by a single flap, taken from the healthy parts below the fistula. The operation was performed under the carbolic acid spray, and the normal flap and raw surface were covered by Lister's dressings. During the first three days the patient was allowed to take water only, and during the following eight days, only milk, in quantities small at first, and gradually increased. Subsequently to the completion of the operation, no food nor a single drop of fluid passed through the fistula. The gastric wound healed speedily, and the skin-flap united almost by primary intention. No particular phenomena were noticed. Six weeks after the operation the patient was completely cured, and in a very good condition as to general health and nutrition.

#### SCHNEIDER ON SUBPERIOSTEAL AMPUTATION.—

Dr. R. Schneider points out (*Berliner Klinische Wochenschrift*, No. 38, 1877) that one of the remote results usually met with in the stump after amputation, performed without any attempt being made to preserve flaps of periosteum, is attenuation of the end of the bone, the conical or pointed apex of which projects closely under, or, in some cases, through the surface of the tense and thin skin. During the healing processes, after amputation, the end of the bone becomes thickened through localised periostitis, but the inflammatory deposit is subsequently absorbed. In consequence of diminished activity of the stump, atrophy of the remaining portion of the bone takes place, and the cortical layer becomes much reduced in thickness. In course of time, as the muscular constituents of the flaps waste, the extremity of the atrophied stump is covered merely by the skin or scar-tissue. According to Dieffenbach, the object to be attained in amputation, in addition to rapid and complete healing, is the formation of an efficient covering for the end of the bone. As the portions of muscle left in the flaps are usually absorbed, surgeons have of late years usually followed the practice of forming flaps of skin only, the stump, in most instances, being formed of one large flap from the anterior surface of the limb, and of a very small flap from the posterior surface. This method has one serious disadvantage. In case of any inflammation of the stump coming on during the healing processes, the skin of the flaps will retract to a considerable extent, and the end of the bone, after having produced ulceration through pressure, will protrude from the extremity of the stump and become necrosed. With the object of guarding against this result, Von Langenbeck proposed that the divided surface of the bone should be covered by a long flap of periosteum, formed in the course of the amputation. Several advantages have been claimed for this proceeding. In consequence, it is stated, of adhesion of the periosteum to the extremity of the remaining portion of the bone, necrosis may be prevented, and the risks of osteo-myelitis much diminished. The skin, it is assumed, is less likely to slough where a soft layer of periosteum is interposed between the flap and the sharp edges of the divided bone. Dr. Schneider holds that Von Langenbeck's proceeding does not always lead to such good results; and that in most cases the long and single flap of periosteum sloughs. For some years past he has, in most of his amputations, fixed over the end of the bone two short flaps of periosteum, each flap being carefully

retained in connection with the superjacent muscular and other soft parts. The vascular supply is thus more likely to be kept up, the periosteum does not so readily contract, and leave exposed the end of the bone, and there is much less risk of necrosis. Should retraction of the soft parts take place, the edges of the bone at the end of stump, being covered by muscle as well as by periosteum, would not be so liable to perforate the skin flaps. Finally, there would not be any direct adhesion of the skin to the extremity of the bone. Similar proceedings, though with certain modifications as to the size and number of the flaps, have been practised by Neudörfer, Billroth, and other German surgeons. Dr. Schneider, who has had considerable experience of this modification of subperiosteal amputation, gives a favourable report of it, and lays down minute instructions for its application to amputation in the different segments of the limbs.

#### SCRIBA ON GONARTHROTOMY.—

Dr. J. Scriba of Freiburg, in a contribution on gonarthrotomy and its indications (*Berliner Klinische Wochenschrift*, No. 32, 33, 1877), advocates the practice of free incision and drainage, under strict antiseptic conditions, in the treatment of various forms of disease of the knee. In support of his views as to the efficacy of this plan of treatment, the reports of twelve cases are given. Seven of these were cases of acute suppuration of the joint. In four of the seven cases there was a good recovery, with perfect mobility of the joint, and in the remaining three cases the result was fatal. In one of the successful cases the suppuration had been due to acute rheumatism, in two to injury, and in the fourth to chronic disease. The joint-affection in two of the unsuccessful cases was the result of acute phlegmonous erysipelas, and in one of caries. The eighth case, one of hydrops articuli, was a successful one. The remaining four were cases of fungous inflammation of the joint, of which three, in consequence of complications of caries and tuberculosis, terminated fatally.

The following are some of the chief points of interest in the author's remarks on the indications for gonarthrotomy under antiseptic conditions. This practice should not be carried out, save as a last resource in cases of acute serous gonitis. It is indicated in cases of acute purulent gonarthromeningitis, in order to prevent ulcerative destruction of the epiphyseal cartilage; and should be carried out also where there is osteomyelitis of one or both epiphyses; so that, through drainage, the risks of pyæmia, pneumonia, and other acute infective diseases, may be diminished. Gonarthrotomy is not so urgently and promptly demanded in cases of acute intra-articular suppuration due to injury, and to acute and gonorrhæal rheumatism. Here the prognosis is more favourable, the affection being usually less acute and uncomplicated by severe general phenomena. In the treatment of cases of chronic inflammation of the articular synovial membrane of the knee-joint, free incisions with drainage are to be preferred to the injection of irritating agents into the synovial cavity. In those forms of fungous gonitis, in which fluid secretion is a much more predominant element than fungous growth, and in which the cartilages are still intact, gonarthrotomy, in the author's opinion, is the only rational method of treatment. In those forms in which fungous degeneration is well developed, so long as caries is not present, the joint should be incised and drained whenever a spontaneous opening is threatened, and after unsuc-

cessful treatment by prolonged rest. In cases of fungous gonitis, complicated with caries, no proceeding short of resection is likely to prove of any service. Incision with drainage and gouging away of the diseased portions of bone can be justifiably practised only under certain conditions. The patient must be young, the lesion strictly local, and uncomplicated with tubercle in the joint or in any remote organ. The author is strongly opposed to the practice of gouging away carious bone from a diseased joint in an adult; and regards such a proceeding as a useless attack on the strength of the patient. He is of opinion that in early stages of fungous knee-disease, and when the bones are not diseased, resection should not be performed. It is laid down as a law that, the earlier the stage of fungous inflammation of the knee with which the surgeon has to deal, the better are the prospects of enabling the patient, through gonarthrotomy, to retain an useful and movable joint.

In conclusion, Dr. Scriba insists on the importance, in cases of convalescence from disease of the knee, of commencing passive movements at an early period. In two of the reported cases the leg was flexed, and extended immediately after the removal of the drainage tube; and subsequently at every change of splint and dressings. As soon as the wounds are closed, more frequent and active movements should, it is stated, be effected, and the patient be allowed to stand up.

W. JOHNSON SMITH.

VAN BUREN ON A NEW METHOD OF TREATING FRACTURED CLAVICLE.—To the long array of appliances for the treatment of fractures of the clavicle, another is now added by Dr. Van Buren (*Chicago Medical Journal and Examiner*.) But as it, unlike many other modern appliances, is designed on one of the truest principles of surgical art, namely, that of simplifying treatment, it deserves notice.

Not fully satisfied with Dr. Lewis Sayre's method of putting up such fractures, 1. on account of the "itching" caused by the adhesive plaster; 2. from "the difficulty in holding the arm and shoulder back by a hitch around the body with the latter," he recommends the following modification of it.

He first adjusts the ends of the fractured bone in the usual way, by drawing back the shoulder. Then, taking a bandage of doubled unbleached calico, four inches wide, and of sufficient length, he folds it on itself at one end, and, stitching it so, slips the hand on the injured side through the loop thus formed, and draws the latter up on the arm as far as the axillary margin. The rest of the bandage is then passed across the back, under the sound arm, over the sound shoulder again, across the back, and is then stitched or pinned to itself at the point where the loop was formed.

A second bandage, of similar width and material, is then applied, the fore-arm of the injured side being flexed, and the hand placed flat on the chest, pointing to the other shoulder. One end being pinned or stitched to the lower margin of the first bandage, in front of the sound shoulder, it is passed diagonally downwards across the chest, under the hand and flexed fore-arm, carried around the arm at the elbow, and back on the dorsal surface of the fore-arm and hand, to be fixed, as before, to the first bandage at the point from which it started. The lower margins of this portion are then sewed together for about three inches at the elbow and also above, and a trough for elbow and hand thus formed.

The author prefers fashioning this trough beforehand, and then adjusting it and pinning its ends in

the position indicated. It acts on the arm as the plaster in Sayre's method, preventing also the first bandage from cording under the axilla, by its attachment to its lower margin.

The author uses, further, a little padding at the points likely to be excoriated. He claims for his appliance the advantages of 1. simplicity; 2. effectiveness; 3. comfort.

A. E. BARKER.

LANDI ON THE DIAGNOSTIC VALUE OF PULSATIION, A PROPOS OF A CASE OF PULSATING TUMOUR OF THE UPPER END OF THE LEFT TIBIA.—In the *Commentario Clinico di Pisa* for May and June 1877, Professor Pasquale Landi of that city analyses the six cases collected by Nélaton, and considered by that surgeon entitled to the name "true aneurism of bone," four other cases collected by Volkmann, and related in Pitha and Billroth's *Handbook*; a case of Cappelletti's (Trieste); and, lastly, one of Landi's own, making twelve in all.

The tibia was the bone affected in nine cases, in eight of which the head of the bone was the seat of the tumour, while in the ninth (Scarpa's) this was below the head. The lower end of the femur in two cases, and the head of the humerus in one (Richet's), completed the list. Except two, the cases ran a slow course; in one half an injury is related, and in the other half is wanting.

All these intra-osseous tumours pulsated, except Richet's, where, however, a blowing murmur was audible. In one other only (that of Carnochau, lower end of the femur) was there a bruit.

In nine the tumour grew before the thirtieth year, and in two at the fifty-fourth and sixty-third; while in one no age is given. All resembled ordinary aneurism, in the feature of distensile pulsation (in the one case replaced by a murmur, with which it was combined in another), and in the cases of Pearson and Scarpa were actually diagnosed as aneurism of the anterior tibial; but the anatomical examination failed in every case to show the artery implicated. They were all, moreover, clinically different from ordinary aneurism in the characteristic feature of a bony wall, more or less imperfect, no doubt, but present in each. In two only did complete cure result from ligature of the main arterial trunk (case of Lallemand and that of Roux). In two others, after ligature of the main artery, the tumour ceased to pulsate, but remained diminished in one case (that of Largout and Fleury) and fluid in the other (Nélaton's.)

In three cases the ligature failed, and recurrence took place (Dupuytren, Carnochau, Cappelletti); but the consequent amputation was successful. Primary amputation succeeded in two (Parisot and Scarpa), but fatal recurrence took place after five years in the case of Scarpa. Two primary amputations were fatal (Pearson's and Richet's.)

He discusses at great length the clinical signs, the results of treatment, and the pathological anatomy of this very rare class of cases, more especially in relation to their origin in a new growth, such as myeloid, or in some cases a malignant central osteosarcoma; and offers the opinion "that osteo-aneurism does not really exist, and that certain symptoms, characteristic of ordinary aneurism, are but accessory phenomena in the case of certain new growths of a nature more or less malignant."

His own case he diagnosed to be pulsating myeloid tumour of the head of the tibia, and microscopical examination confirmed the opinion. Amputation proved successful. The four cases of Professor



Gherini are then briefly given. (1.) Pulsating tumour of innominate bone, mistaken for abscess and punctured, but bleeding arrested. Ultimate death from exhaustion, the tumour spreading greatly. No examination. (2.) Myeloid pulsating tumour of patella. (3.) Pulsating tumour of lower end of femur. (4.) Pulsating tumour of head of tibia. Thus in only one of these was the exact nature of the growth made out, but cases 3 and 4 are judged by Professor Gherini, from their resemblance to case (2), to be probably of the same nature.

[The paper is most elaborate, and certainly discusses every point in the natural history of these rare and interesting cases. But, although it occupies forty-two pages, it in fact throws no more light upon the subject than is much more tersely effected in the article by Volkmann, in Pitha and Billroth's *Handbook*, which Landi quotes, and where the subject is viewed, as in this paper, in the light of modern pathological histology; whereas, in a clinical point of view, there is nothing in it that is not more clearly put, and, in fact, more comprehensively dealt with, in the masterly account given in few words by Stanley, now long ago. Stanley does not use the word aneurism at all for these cases, but simply calls them pulsating tumours of bone.—*Rep.*]

RUSHTON PARKER.

**GAZZAZI ON SYPHILITIC DACTYLITIS.**—In the *Giornale Italiano delle Malattie Veneree e della Pelle* for August 1876 (abstract in *Annali Universali*, September 1877), Dr. R. Gazzazi relates a case of syphilitic disease of the fingers, which is interesting both on account of its rarity, and of the points of diagnosis between it and other diseases with which it may be confounded.

The patient was a woman, aged 32, who became infected with syphilis soon after her marriage, having a hard chancre and indurated inguinal glands. Two months later she became pregnant; her hair then fell off until she was completely bald, and she had pain in the throat with difficulty of swallowing and speaking. She was delivered at full time of a male child, which died of syphilis at the end of eighteen days. She then had a diffuse papular eruption over the whole body, for which she took protiodide of mercury. Under this treatment she improved so far as to be apparently cured. After a short time she again became pregnant, and was delivered of a second boy, who lived fifteen months. Within a few days after birth it had a papular eruption, followed by *plâques*, the voice became hoarse, its general health was impaired, and it died with epileptiform convulsions.

Four years from the first infection, nodules of tubercular lupus appeared on one arm, and became ulcerated. The patient was seen by Professor Gamberini, who treated her with iodide of sodium and biniodide of mercury. As, however, the symptoms continued to increase, she became a patient of the hospital at Bologna, where she was admitted four times in the course of seven years.

A year after this the patient observed an enlargement of the middle finger of the right hand, which became painful. After some time these phenomena improved, but returned as before at the end of a year with the following characters. The middle finger began to enlarge, and assumed the form of a cone, the base of which was formed by the first phalanx increased to three times the normal size; the swelling diminished in the second phalanx, leaving the last quite free. The same symptoms

appeared in the metacarpal bones of the thumb and little finger, so that the hand was deformed, presenting anomalous curves. The skin was distended and of a violet colour, and near it were spread abundant varicose vessels, of elastic consistence, without fluctuation; pain was not increased by pressure. The movements of the part were impeded. Professor Gamberini diagnosed syphilitic dactylitis, and prescribed iodide of sodium in increasing doses, with fixed doses of biniodide of mercury. Under this treatment, at the end of a fortnight, the feeling of tension diminished, the glistening aspect of the skin disappeared, the symptoms diminished, and at last entirely disappeared, and the patient left the hospital completely cured. In this case, Dr. Galazzi shows, the dactylitis appeared thirteen years after the first infection, and this is a point of much importance in the diagnosis between syphilitic dactylitis and spina ventosa. The scrofulous form of the disease always runs a chronic course, and appears in children; while syphilitic dactylitis is peculiar to adults, follows other secondary symptoms, and is not always confined to the bones, but may affect other tissues.

**RUGGI ON LIGATURE OF THE COMMON CAROTID ARTERY IN CASES OF INJURY OF THE EXTERNAL CAROTID.**—In a memoir on this subject, abstracted in the *Annali Universali di Medicina (Parte Rivista)* for September, Dr. Giuseppe Ruggi gives the results of experiments which he made on the dead body for the purpose of determining the best operative proceedings to be followed in cases of injury of the external carotid artery, and of ascertaining the course of the blood in the upper part of the carotid after ligature and in its secondary branches. The conclusions at which the author arrived are the following. 1. There are considerable anastomoses between the carotids of one side and those of the other. 2. When the common carotid artery is tied, these anastomoses are capable of establishing a supplementary retrograde current in the course of a few minutes or seconds. 3. The current from one external carotid to the other is slow, in consequence of having to pass through a very fine network composed of the ultimate ramifications of the vessels of the two sides. 4. As regards the internal carotid, the current which takes place through the circle of Willis is three or four times as strong as that in the external carotid.

Collating these results of experiment with those of clinical observation, Dr. Ruggi agrees with Velpeau that, in most cases, ligature of the external carotid is not sufficient to restrain hæmorrhage from injury of one of the branches of the external or internal carotid, while the application of a ligature to one or the other of the secondary carotids absolutely interrupts all secondary circulation. He relates the following case in support of this view.

A man was admitted into hospital with neuralgia of the left inferior dental nerve, for which excision of a portion of the nerve was performed. Ten days after the operation, the patient had repeated and abundant hæmorrhage from the mouth. The source of the bleeding could not be accurately determined, but was supposed to be a rupture of the inferior maxillary artery, produced by ulceration in the course of the operation-wound. The right side of the face was enormously swollen and pale, the pulse was small and intermittent, the limbs were cold, the voice was feeble. Dr. Ruggi tied the common carotid artery  $2\frac{1}{2}$  centimetres (about an inch) from its origin; he also placed a ligature on the

superior thyroid. The hæmorrhage did not return. Along the course of the left external maxillary and superficial temporal, all pulsation was absent. The patient left the hospital perfectly cured.

**PALLOTTI ON A HYPOGASTRIC URINARY FISTULA TREATED SUCCESSFULLY BY THE ACTUAL CAUTERY.**

—Dr. Pallotti relates the following case in the *Bulletino delle Scienze Mediche di Bologna* for June 1876 (abstract in *Annali Universali di Medicina*, September 1877). B. C., aged 70, was in 1866 obliged to ride on horseback eight days consecutively among the Appenines, and, not being accustomed to this exercise, was attacked with severe prostatic inflammation accompanied with strangury; perineal abscess was also threatened. The prostatitis was treated energetically on antiphlogistic principles, by general bleeding, leeches, etc.: this, perhaps, prevented suppuration, but the strangury was not removed. The patient had retention of urine for four days, and the bladder was enormously distended; a catheter could not be introduced. In this state of things it was determined to puncture the bladder above the pubes. This was accordingly done, and three kilogrammes (about 6½ pints) of already decomposed urine were removed. The silver cannula was allowed to remain *in situ* eight days: the inflammation of the prostate not ceasing, and the patient being unable to pass urine by the natural channel until the end of that time. In less than two weeks he had quite recovered from the prostatitis, and no longer had retention of urine, but the opening made by the puncture remained open, allowing the urine to escape and soil the clothes, giving rise to a disgusting smell. On account of the inconvenience the patient consulted Dr. Pallotti in July 1866. He first tried cauterisation with nitrate of silver, which he continued for two months without success; he then applied a suture, also ineffectually. He next had a button-shaped cautery made, having in the centre of the button a long conical beak for insertion into the interior of the fistula, so as nearly to reach the bladder. On October 2 the cautery, having been heated to a white heat, was introduced into the fistula and immediately withdrawn. The result was the production of a moderate but sufficient amount of adhesive inflammation. The subsequent dressing consisted in the application of a cabbage leaf greased with purified lard, and changed twice or thrice daily.

On the external aperture of the fistula a small scab formed, which at the end of nine days fell off, leaving beneath it a single drop of thick creamy pus, which, being removed, showed a number of granulations. These were touched twice with nitrate of silver, and the fistula was completely closed in a fortnight. He was seen by Dr. Pallotti five years later, the cure was permanent.

**VEREBÉLYI ON TREATMENT OF CONGENITAL CLUB-FOOT BY SUPERIOSTEAL REMOVAL OF THE ASTRAGALUS.**

—L. Verebélyi describes in the *Pester Medicin-Chirurg. Presse*, No. 14, 1877, the case of a child aged 5½, the subject of congenital club-foot affecting both limbs. Tenotomy and the application of a plaster of Paris bandage having failed, the astragalus of one foot, which presented the principal obstacle to reduction, was laid bare by an incision, and, the periosteum having been stripped off, was removed. The foot was then brought into proper position, in which it was retained by a fenestrated plaster of Paris bandage, and afterwards by a proper

apparatus. After the healing of the wound, the foot easily preserved its proper direction.

A. HENRY, M.D.

**PANAS ON THE TREATMENT OF RANULA.**—Dr. Panas (*Bordeaux Medical*, July 31) has frequently succeeded in curing ranula by the injection into the tumour of from four to ten drops of a concentrated solution of chloride of zinc. Among others, he cites one obstinate case in which excision, seton, and drainage had successively failed; the contents of the cyst were always reproduced, and finally operative interference was abandoned, except when attacks of suffocation rendered palliative puncture necessary. Ten drops of a solution of chloride of zinc, of the strength of one to ten, were injected without previous evacuation of the cyst; and, shortly afterwards, the injection was repeated with a 20 per cent. solution. In less than five weeks from the time this treatment was begun, a complete cure had been produced. This treatment is applicable to all varieties of mucous and serous cysts. It has succeeded in a case of subhyoid cyst, which had resisted cauterisation and the injection of tincture of iodine; it yielded to a single injection of chloride of zinc.

**ALVARES ON THE TREATMENT OF BLENNORRHAGIC EPIDIDYMITIS WITH IODOFORM OINTMENT.**—Dr. Alvares, of Palma, in Majorca, has treated four cases of epididymitis with iodoform ointment, and from his experience in those cases draws the following conclusions.

1. Iodoform relieves the pain of blennorrhagic orchitis better than any other application; this result is obtained at the end of one or two hours.

2. Iodoform exerts a very manifest resolvent action, and has the advantage over mercurial ointment, of causing no disturbance when absorbed.

3. The iodoform treatment shortens very appreciably the duration of the orchitis, and prevents any consecutive induration of the organ.

4. The ointment used should contain, according to the intensity of the inflammation, from one to two grammes of iodoform to thirty grammes of lard.

**CRÉQUY AND RICORD ON THE TREATMENT OF HÆMORRHAGE.**—M. Créquy proposes (*L'Union Médicale*) in cases of severe epistaxis, to substitute for the ordinary plug—the application of which to the posterior nares is often very difficult—the following mode of injecting perchloride of iron, whereby the full styptic effect is secured without the dangers with which the use of that remedy is not infrequently attended. An ordinary syringe is fitted with a cannula about two and a half inches long, terminating in a rounded extremity, and perforated throughout its length by a series of small holes, spirally disposed, and directed backwards, so as to emit small retrograde jets. When the cannula is introduced horizontally into the nasal fossa, and the syringe filled with a solution of perchloride of iron, the injected fluid is thrown upon the mucous surface, and does not fall upon the pharynx or stomach. Generally one injection is sufficient. For hæmorrhages in general, and especially for metrorrhagia, M. Ricord finds injections of hot water at 50 deg. centigrade (122 deg. Fahrenheit), applied through a tube to the deck of the uterus, to be an almost infallible mode of arrest.



## RECENT PAPERS.

- Hydatid Cyst of the Liver: Capillary Puncture: Cure. By Dr. Bergeron. (*La France Médicale*, September 8.)
- Compression and Methodised Immobility by Air on Water; Dressing of Wounds with Hermetic Occlusion. By M. de Chassagny. (*Lyon Médical*, September 9.)
- On the Differential Diagnosis between the Several Varieties of Arthritis. By Dr. Gosselin. (*L'Union Médicale*, November 1.)
- On Total Resection of the Knee-Joint. By Dr. J. Eckert. (*Wiener Medizin. Wochenschrift*, August 25; September 1, 8, 15.)
- Incision of Joints in Cases of Irreducible Dislocation. By Dr. H. H. Ranke. (*Berliner Klinische Wochenschrift*, September 3.)
- The Surgery of Intestinal Obstruction. By Dr. R. Adriani. (*Lo Spérimentale*, September.)
- Vesicular Mole. By M. G. Dauzats. (*La Province Médicale*, July 18.)
- Note on a Plan which often allows the Passage of Strictures said to be Impassable. By M. Leon le Fort. (*Bulletin Général de Thérapeutique*, June 30.)
- Indications for the Occlusion of the Peritoneum by the Elastic Ligature after Kelotomy. By M. Mollière. (*Lyon Médical*, August 5.)
- On Transfusion of Blood by a New Apparatus. By Dr. A. Vachetta. (*Commentario Clinico di Pisa*, July 1877.)
- A Contribution to the History of Salivary Calculi, with Remarks on these Concretions. By Dr. Feroci. (*Ibid.*, Nos. 3, 4, 5, 6, 7.)
- On a Case of Intravaginal Spermatocoele. By Dr. C. Parrini. (*Ibid.*, No. 8.)
- Pneumonia of the Hand. By M. S. Duplay. (*Le Progrès Médical*, August 4.)
- On Congenital Tumours of the Sacro-Coccygeal Region. By MM. E. Monod and Ed. Brissaud. (*Le Progrès Médical*, August 11.)
- On Antiseptic Arthrotomy and its indications. By Dr. Eng. Boeckel. (*Gazette Médicale de Strasbourg*, October 1.)
- Remarks on Subperitoneal Phlegmons. By Dr. J. Arnould. (*Gazette Médicale de Paris*, October 6.)
- Note on a New Method of Dressing Wounds. By Dr. Duchène. (*Lyon Médical*, October 7.)
- On the Osseous Lesions which Assist in the Diagnosis of Hereditary Syphilis. By M. Parrot. (*Gazette des Hôpitaux*, September 25.)
- Difficult Evolution of a Wisdom-Tooth; Abscesses of the Perimaxillary and of the Left Sphenoidal Lobe. By Dr. Tueffert of Montbéliard. (*L'Union Médicale*, October 20 and 23.)
- Case of Fracture of the Skull, with Depression of a Bony Fragment, and Issue of Cerebral Matter, followed by Cure. By Dr. L. Faisant. (*Lyon Médical*, October 21.)
- On a Means of Facilitating the Evacuation of Gravel, and Preventing the Recurrence of Stone in Patients Suffering from Habitual Uric Gravel. By Dr. A. Dubuc. (*L'Union Médicale*, October 27.)
- On the Treatment of Prolapsed Rectum by Painting with Solution of Perchloride of Iron. By Dr. Gelineau. (*Paris Médical*, Oct. 25.)
- A Case of Atrophic Spinal Paralysis from Unilateral Traumatic Hæmorrhage in the Cervical Enlargement of the Spinal Cord. By Dr. E. Remak. (*Berliner Klin. Wochenschrift*, October 29.)
- The Anæsthetic Treatment of Diseases in the Extremities. By Dr. B. Cohn. (*Ibid.*, October 29.)
- Cicatricial Stricture of the Oesophagus: (Esophagotomy. By Dr. R. Bryk. (*Wiener Med. Wochenschrift*, October 6, 13, 20, 27, November 3.)
- On Aneurismal Sacs. By W. Colles. (*Dublin Journal of Medical Science*, October.)
- Acute Lateral Curvature of the Spine. By Dr. T. P. Tuckey. (*Ibid.*)
- Clysmatic Ulcers. By Dr. Koester. (*Deutsche Medizin. Wochenschrift*, October 13.)
- The Diagnosis of Cancer of the Oesophagus. By Dr. J. Schrank. (*Allgemeine Wiener Medizin. Zeitung*, October 30.)
- On Chronic Ulceration of the Urethra in Women. By Dr. E. Cedman. (*Nordiskt Medicinskt Arkiv*, Band IX.)
- On Regeneration of Bone after Resection of the Humerus. By A. H. Schoemaker. (*Weekblad van het Nederland Tijdschrift voor Geneeskunde*, No. 34, 1877.)

## MATERIA MEDICA AND THERAPEUTICS.

DETTWEILER ON THE PRESENT THERAPEUTICS OF PHTHISIS.—Dr. P. Dettweiler, Director of the Institution of Falkenstein, in the Taunus, in the *Berliner Klinische Wochenschrift* (Aug. 27, Sept. 3 and 17, 1877) discusses the therapeutics of phthisis, especially in their hygienic and climatic aspects, dwelling at some length and in a spirit of scepticism on the alleged grounds of each pathological theory, and of each set of climatic results, and urges that no great stress should be laid on the elements of humidity, temperature, or barometric pressure, as cases of phthisis have occurred under very various degrees of all these conditions. He notices three facts with regard to climate in phthisis. 1. As many instances of

arrest of the disease occur in winter (especially in January and February) as in summer, and most patients bear low temperatures better than high ones. 2. In all climates, they become worse in early spring. 3. During the long-continued heat of summer, with a clear sky, the number of cases of hæmoptysis increases. The author does not believe, with Brehmer, that altitude exercises any marked influence over the heart's action, as his own observations on the pulse, carried out at an altitude of 5,000 ft. to 7,000 ft., and also at the sea-level, gave an average of from 60 to 64 beats in either situation; but he approves of altitude in selecting a climatic station, because it insures purity of air, with a certain amount of movement, and the absence of all industrial manufactures likely to contaminate the atmosphere.

In dietetics, he insists on adapting the quantity and quality of food to each individual case: milk should be given, not as is usually done, in large quantities, and when the stomach is empty, but sometimes only in mouthfuls at a time, with or after food, and often mixed either with cognac, soda or seltzer water. Wine also, which is generally ordered very indiscriminately, should be given with great discretion, commencing with a very small quantity for patients unaccustomed to it. For those with sluggish anæmic constitutions, a bottle of good wine is ordered daily, to be taken, not only at meals, but also some teaspoonfuls at a time every hour.

With regard to baths, Dr. Dettweiler considers that the douche can only be used in a certain number of cases; but that where water-treatment is inadmissible, on account of the delicacy of the patient, dry frictions in bed are serviceable, as they cleanse the skin from perspiration and old epidermic scales, and excite vaso-motor action. He recommends inhalations of steam, and the oleum pini pumil; and in appropriate cases the use of Waldenburg's apparatus for condensed air.

Finally, he objects to the plan of patients living at hotels or lodgings, out of the immediate supervision of the physician, and being only visited once a day by him. For any real improvement, Dr. Dettweiler insists that they must be in an institution where the rules relating to food, drink, bed, and bath are carried out vigorously by an energetic, clear-sighted physician, who is himself thoroughly impressed with their importance; and the invalids must feel that they are under the guidance of a strong powerful rule, established for their good alone, and voluntarily surrender their own free will in all matters pertaining to health.

[There is nothing new in the paper, and the doctrines, coming as they do from the director of a private sanitarium, are not remarkable for their modesty or impartiality. The directions about the use of wine are open to grave abuse.—*Rep.*]

SCHMELTZ ON SUBCUTANEOUS INJECTION OF DEFIBRINATED BLOOD.—Dr. Schmeltz of Schlestadt reports (*Annales et Bulletin de Gand*, June) a case of consumption with great weakness and intense anæmia, in which subcutaneous injection of defibrinated blood was employed. The patient was first seen by Dr. Schmeltz in March 1874; he was then over sixty years of age, had been sick for a long time, and was confined constantly to his bed, in consequence of extreme weakness. He was much emaciated, and almost all over his lungs there were dulness, bronchial breathing, and moist rales. He had hectic, and suffered from neuralgic pains, from frequent attacks of syncope, and from dyspnoea. His stomach soon became weak, and neither food

nor medicines could be retained. Dr. Schmeltz then determined to try subcutaneous injection of defibrinated blood, which had been first recommended by Dr. Karst of Kreuznach. The blood used was taken by cupping from the back of the patient's son, and was carefully defibrinated. Eight injections of five grammes (77 grains) each were made into the arms and legs at one sitting, consequently 40 grammes (ten and a quarter drachms) in all were injected. The swellings caused by the injections had disappeared at the end of the second day. The operation was followed by a very rapid improvement in the general condition of the patient. His appetite returned; the pulse became dull and firm, and 80 per minute; the neuralgia, anxiety, palpitations, and extreme weakness were relieved, and he was able to sleep. Eight days after the operation he got up, and convalescence was thenceforth uninterrupted. The patient is still living, and in good health. During the last two years he has required no medical treatment.

Dr. Schmeltz thinks that this case proves that the hypodermic injection of blood may prove useful in many cases where transfusion is indicated, especially in cases of anæmia, in which the stomach rejects all nourishment and medicine.

C. THEODORE WILLIAMS, M.D.

FILHOL AND BARRAL ON THE DETECTION OF IODINE.—M. Filhol describes in the *Journal de Pharmacie et de Chimie* for May a new proceeding to detect traces of iodine. A little pure potash is added to the liquid, which is then evaporated to dryness. The residue is exhausted with alcohol, and the alcoholic solution is also evaporated to dryness. This new residue is treated with water, a few drops of hydrochloric acid added, or a very little chromic acid. Into the mixture are poured two or three drops of sulphide of carbon, and the whole is then well shaken. The liberated iodine is dissolved in the sulphide of carbon, and colours it violet.

M. Barral describes in the same journal a method for recognising iodine in cod-liver oil, and experiments on the absorption of iodide of potassium by animal fats. The oil is placed in a vessel, and burnt by means of a wick. The products of combustion enter a vertical condenser through a funnel-shaped aperture, and the liquid condensed is allowed to drop into a capsule. To the distillate is added caustic potash, and it is evaporated almost to dryness. Iodine is then tested for by means of starch-solution and chlorine water, or concentrated nitric acid.

*Experiments.*—Half a gramme ( $7\frac{1}{2}$  grains) iodide of potassium was daily given to a goat for eight days. During all this time the whole of the animal's milk was used in the preparation of butter. When purified and melted the butter weighed 60 grammes and contained iodine.

Half a gramme of potassic iodide was given daily for eight days to a goat having a kid. At the end of that time the kid was killed, and 50 grammes of adipose tissue were taken from the neighbourhood of the kidneys. Iodine could easily be detected in the products of combustion of this melted fat.

T. CRANSTOUN CHARLES, M.D.

TORTORA ON THE ABSORPTION OF CARBOLIC ACID AND ITS RECOGNITION IN ORGANIC LIQUIDS.—Dr. Ignazio Tortora has published in *Il Morgagni* for January (abstract in *Annali Universali di Medicina*, August) an account of some observations made by him under the direction of Professor Cantani,

regarding the absorption and elimination of carbolic acid.

The method which he adopted was the following. Urine containing carbolic acid was heated and treated with nitric acid; the fluid was then slowly evaporated to dryness; the yellow residue was dissolved in rectified alcohol, which took up the carbolic acid, leaving the mineral constituents of the urine. The solution was then filtered, the carbolic acid passing through and giving a yellow colour to the filtrate. The solution, when treated with carbonate of potash, gave a dark red precipitate of picrate (carbolate) of potash.

Operating in this way, and using similar quantities of urine, alcohol, and nitric acid respectively, he always found carbolic acid in the urine after its administration.

He gives the details of the observations in the case of a patient to whom, at 9.30 A.M., he began to administer, every fifteen minutes, 30 grammes (about an ounce) of the following mixture: crystallised carbolic acid, 3 grammes; rectified alcohol, 10 grammes; water, 300 grammes; orange syrup, 30 grammes. After each dose the mouth was washed out with water, which was swallowed. The following results were obtained by examination of the urine several times during the day.

1. At 11.30 A.M. some rather pale urine was found; quantity, 340 cubic centimetres. Of this, 20 cubic centimetres were treated with ten drops of pure nitric acid, evaporated slowly to dryness, and the residue dissolved in 10 cubic centimetres of rectified alcohol and filtered. The resulting liquid had a red colour.

2. At 1 P.M., 300 cubic centimetres of greenish-brown urine were passed, of which 20 cubic centimetres were treated in the manner described above. In this urine, when scarcely warm, as indeed is the case whenever a certain quantity of carbolic acid is present, a yellow ring was formed; this may be regarded as a sure sign of the presence of carbolic acid. The filtered liquid had a more distinct red colour.

3. At 4.30 P.M. the quantity of urine was 100 cubic centimetres, colour, greenish brown. The yellow ring was present; and, after treatment, as before, the solution was still more coloured.

4. At 6.45 P.M. 110 cubic centimetres, of the same colour as before, were passed. The alcoholic solution had a strong red colour.

5. At 3.30 A.M. on the next day the quantity of urine was 300 cubic centimetres, and the colour normal. The circle formed in the capsule was of a faint yellow colour. The alcoholic solution was less coloured, almost resembling that of No. 2.

6. At 5.30 A.M. 90 cubic centimetres of pale yellow urine were passed, of which 20 cubic centimetres were treated as in the other experiments. No yellow ring was formed. The alcoholic solution was very pale, and hence was believed to contain only traces of carbolic acid.

7. No indication of the presence of carbolic acid could be detected in the urine passed at 8 A.M.

At 12.45 (45 minutes after the last dose had been taken) the patient began to discharge saliva, which was collected up to 11 P.M., and treated in the same manner as the urine. It yielded an intensely red solution, and picrate of potash was formed on adding carbonate.

In order to determine whether carbolic acid was absorbed in other ways than when given internally, Tortora applied a large blister to the arm, and



dressed the vesicated surface with carbolised water. The saliva collected for twenty-four hours, and the urine, when treated in the way above described, gave indications of the presence of carbolic acid.

From his experiments the author believes that he may conclude that carbolic acid is absorbed from the alimentary mucous membrane, or from the skin deprived of epidermis, or from wounds; and that, at least in great part, it is eliminated unchanged in the natural excretions, the elimination taking place rather rapidly, and being completed within ten or twelve hours. For internal use, the dose may be as high as 30 grains, but care must be taken that it is quite pure, and it should be given in an abundance of water.

**FORLANINI ON THE MECHANICAL ACTION OF BATHS OF COMPRESSED AIR.**—Dr. C. Forlanini has communicated to the Medico-Pneumatic Institute of Milan a preliminary article on this subject (*Gazzetta Medica Italiana-Lombardi*, March 31, 1877.)

The action of compressed air on the organism is of two kinds—chemical and mechanical. The former consists in the increased absorption of oxygen by the lungs, the latter in the modification which the increase in the density of the air exerts on the mechanical act of respiration, and probably on the circulation of the blood, and on the density and compactness of the tissues, which are immediately in contact with the air. Regarding the mechanical action, the author makes the following remarks.

1. It is admitted without dispute that, in the compressed air bath, the capacity of the lungs is increased in healthy subjects, by reason of the reduction of the volume of the intestinal gases, and the consequent descent of the abdominal wall and the diaphragm.

2. It is also admitted, without dispute, that the bath of compressed air produces this increase of the spirometric pressure in a still higher degree in the subjects of catarrhal bronchitis. This fact, the therapeutic importance of which cannot be overlooked, is explained by the deobstruent action which the compressed air exercises on the minute bronchial tubes, when blocked up by the bronchitic secretion, through the establishment of a greater pressure than that of the ordinary atmosphere. Waldenburg's apparatus has an identical action, but it is not possible to determine *à priori*, whether it or the compressed air-bath possesses the greater deobstruent power over the small bronchi. Numerous comparative experiments have convinced Dr. Forlanini that Waldenburg's apparatus is in this respect superior to the bath of compressed air.

3. For a long time it was assumed that the air-bath exercised an anæmiating and compressing action in the peripheric tissues; that, in consequence of the increased density of the air, the blood was pressed out of the tissues with which the air came into contact, and forced into the deep-seated vessels; and that the tissues, being compressed against the subjacent solid parts, became condensed. The hæmorrhage and peripheric congestions observed in aeronauts; the opposite facts observed in divers and in drivers of bridge-piles, and in coal-miners; together with the uniform results of experiments; these are the proofs adduced in support of this theory. By it are explained in great measure the results obtained by the use of the air-bath in the treatment of inflammation and hyperæmia of the mucous membranes of the respiratory apparatus, Eustachian tube, etc.

This theory, the correctness of which has been

recently impugned by Bert, Forlanini holds to be untenable. Microscopical examination of the circulation in the frog; observations on the vessels of the conjunctiva and retina; and especially experiments made with Professor Mosso's plethysmograph, have shown him that, under the use of the compressed air-bath, the calibre of the capillaries does not undergo change. He promises in a short time to give a detailed account of his experiments.

**MARINO ON THE SUBCUTANEOUS INJECTION OF ERGOTIN IN NEURALGIA.**—In an article on this subject in the *Gazzetta Clinica di Palermo* for June 1876, Dr. S. S. Marino sums up in the following conclusions.

1. In sunstroke and tic-douloureux, local hypodermic injections of ergotin have rapid and certain effects, superior to those obtained by all other remedies, including quinine.

2. The results are equally good in hemicrania.

3. In sciatica, ergotin may also give ready and brilliant results, but sometimes, from reasons which we do not yet know, it may completely fail, even in individuals in whom its use appeared at first quite successful. It is necessary to enlist new facts, in order to pronounce a definitive judgment on its value in this troublesome and obstinate malady.

4. It would also be useful to try the effect of the hypodermic injection of the fluid extract of ergot in other neuralgiæ, especially those dependent on blood-infection and cachexy. It is well known that, in diseases of the nervous system, it is not reasonable to trust to any one remedy; often, after remedies of the highest repute have been tried and failed, relief has been obtained from one from which little was expected. Even when the disease recurs in the same form, the same remedy does not always give useful results.

5. When injected under the skin, ergotin does not cause abscess, except in very rare cases, nor erysipelas, nor any other inconvenience. The injection is usually followed by more or less intense burning, sometimes pain; but both disappear in half an hour, if the seat of the puncture be dressed with small compresses dipped in cold water.

6. Sometimes after one, more frequently after two injections, the pain entirely ceases; but, in order to secure the advantage gained, it is advisable to continue the injections, in number from two to six after the first two, according to the severity of the neuralgia, and the length of time during which it has lasted.

7. Dr. Marino has not found it necessary to inject more than 20 centigrammes (3 grains) of the remedy; for adults, 15 centigrammes are ordinarily sufficient. He dissolves it in either water or glycerine.

**PAQUELIN AND JOLLY ON PHOSPHATE OF LIME.**—

In an article in the *Bulletin de Thérapeutique*, MM. Paquelin and Jolly arrive at the following conclusions. 1. Phosphate of lime is absorbed only in very small proportion. 2. The organism in general consumes very little of it. 3. The circulation carries only insignificant quantities of the phosphate; with the exception of the bones, our tissues contain, so to speak, only traces. 4. Lime enters the organism in two states; in small quantity, in the form of bisulphate, and in sufficiently blank proportion, in the form of salts that are not phosphates. A part of the non-phosphorised lime-salts pre-exists in the food (carbonate of lime); the other part is one of the products of the decomposition of the sulphate of

lime in the food by the acids of digestion (chloride of calcium, lactate of lime, etc.) 5. The organism makes its phosphate of lime by a double exchange, and finds in the food all the elements necessary for increasing the production of this substance, according to its needs. 6. The greater part of the phosphate of lime in the urine is found in the bladder; and the whole of the salt in the urine is therefore not a direct product of dissimilation. 7. Of the two elements, phosphoric acid and lime, which enter into the composition of phosphate of lime, the phosphoric acid is absorbed in certain proportions in the form of alkaline phosphate, while the lime is directly thrown out by the intestines. 8. The addition of phosphate of lime to food is an obstacle to nutrition. 9. The soluble preparations of phosphate of lime act primarily as acids, and then, in consequence of the changes which they undergo in the intestine, they act, secondarily, in a certain measure, as phosphates having another base.

**FEDELI ON THE VERMIFUGE ACTION OF PUMPKIN-SEEDS.**—In a letter published in *Il Raccogliatore*, Nov. 6 and 7, 1877, Fedeli relates the following case, to illustrate the efficacy of the seeds of cucurbitaceæ in tapeworm. A boy aged 7 had been affected with tænia during four years, and had become much debilitated by the numerous medicines administered to him. It was at last determined to stop all internal treatment, and to send him, during the summer and autumn, to the Tusculan hills. While he was there, his parents observed that, whenever he ate boiled pumpkins, he voided numerous joints of tænia, and appeared more lively. Acting on the suggestion conveyed in this observation, they gave him, for two mornings, while fasting, the seeds simply decorticated; and, on the second morning had the satisfaction of seeing him expel several long pieces of tapeworm. From this day he recovered his appetite, his nutrition improved, and he had no further illness.

A. HENRY, M.D.

**KIRK ON BLOOD-LETTING IN URÆMIA.**—A paper has been published in the *Glasgow Medical Journal* by Dr. Robert Kirk, of Glasgow, on uræmia, with cases of scarlatinal drowsy treated by blood-letting. The first case was that of a young man who, after a slight attack of scarlatina, was attacked with frequent convulsions. The attacks became very strong, and nearly continuous, with tonic and clonic spasms, and occasional stertorous breathing. In one of these there were violent convulsions, unconsciousness, foaming at the mouth, with dilated pupils. He was at once bled from the arm to sixteen ounces, three men holding the patient during the operation. The fits ceased almost immediately, a sort of comatose sleep alone remaining. This was about 8 p.m. Next morning at six he awoke, said he felt well, and took some food. The wound, moreover, had burst open, and he lost a good deal more blood, but his pulse was of the natural standard, and he was not the worse for the loss he had undergone. Diuretics were then administered, which brought away plenty of albuminous urine, loaded with lithates. He was discharged at the end of six days, and when seen six months afterwards he was in the best of health, and not at all anæmic. Another case, a very bad one, appeared to show the good effect of local blood-letting in acute pulmonary oedema. In another case a boy, aged 10, was seized with violent convulsions, with only brief intermissions. Ordinary treatment was of no avail. He was bled from the arm to twelve

ounces. The fits immediately ceased, and sleep supervened, from which he woke up apparently well; the urinary secretion was restored, and his health rapidly established.

In every case in which Dr. Kirk has tried blood-letting in scarlatinal drowsy it has proved eminently successful, and he would not hesitate to try the remedy again, "in preference to a farrago of sudorifics, diuretics, and purgatives."

**NOEL ON THE VENOUS PULSE PRODUCED BY CHLOROFORMISATION.**—Dr. Noel bases his paper (*Bulletin de l'Académie Royale de Belgique*, 1876) on more than fifty cases. According to him the phenomenon exists in the majority of subjects without distinction of sex or age; it always appears at the same period of anæsthesia, that is to say, during the waking-up. In these conditions, the internal jugular veins, the subclavian veins, and, in rather more than half the cases, the external jugulars, sometimes even the facial veins, are the seat of pulsations isochronous with the radial pulse. These pulsations seem to the eye very distinct, but only give a slight impression to the touch. A double undulatory movement corresponds to each of these pulsations. The most marked repletion very closely precedes the radial pulse, and is immediately followed by a marked lowering. These pulsations, studied more specially in the external jugular, where the phenomenon is peculiarly significant, disappear after compression of the vein at the lower part of the neck; on the contrary, they persist when the vessel is compressed at the upper limit of the cervical region. They last about half an hour, gradually diminishing in intensity. During the whole of this time, palpation and auscultation of the heart, and examination of the respiration and the pulse, do not reveal any special modification. M. Noel afterwards points out that this phenomenon indicates a profound disturbance of the action of the heart: he therefore advises the surgeon to carefully watch the patient during the period of awakening.

**AMERICAN PHYSICIANS ON VERATRUM VIRIDE IN PUERPERAL CONVULSIONS.**—The editor of the *Virginia Med. Monthly*, September 1877, has done a very serviceable piece of work in collating from a variety of sources the recent experience of physicians in the above treatment. Among others, reported by Southern and Western doctors, he refers to two successes by Dr. Whitehead of Vicksburg, in *Trans. of the Missouri Association*, 1877; several cases by Drs. Southwood and Crosby of Michigan, in the *Detroit Review of Medicine*, September 1876; one apparently moribund case restored by Dr. Ira Oatman of Sacramento (*Trans. of the California Med. Society*, 1877), and several cases of Dr. T. D. Fitch of Illinois. These latter are merely referred to in connection with the discussion before the American Medical Association, which followed some remarks by Dr. J. H. H. Burge upon cases treated in this city by Drs. Corey and Bunker (see *Transactions of American Medical Association*, 1877, p. 240). . . . The editor does not refer to the ten or more successes previously fully reported in the *American Obstetrical Journal*, May 1871, and *New York Medical Record*, March 16, 1874. He cites two successful cases by Dr. Fordyce Barker, in *Buffalo Med. Journal*, March 1877. These reports, concludes the editor, Dr. Landon B. Edwards, "are sufficient to lead to something like a scientific investigation of the subject. Numerous other reports



have from time to time fallen under our notice, which might be collected to show the great value of the agent in puerperal convulsions. Some of the latest and best works on therapeutics do not allude to the use of *veratrum viride* in this affection."

**GORDON ON HYDRASTIS CANADENSIS IN UTERINE HÆMORRHAGE, ETC.**—Dr. Gordon of Hannibal (*Chicago Med. Journal*, August 1877) states that he has, for the last ten years, made extensive use of the tincture of hydrastis in cases of uterine hæmorrhage, with such satisfactory results, that he now seldom resorts to any other remedy. When the hæmorrhage is severe, he gives twenty to thirty drops of the tincture at short intervals, until the active bleeding is controlled. The remedy is then continued in doses of from two to five drops at longer intervals. When there is much prostration from loss of blood, he combines the tincture of cinchona flava with the hydrastis.

In menorrhagia, two to five drops of the tincture of hydrastis, every two or three hours or oftener, give prompt relief. Larger doses may be used if necessary. After the flow is reduced to its normal quantity, the minimum dose is continued twice a day until the next menstrual period, when, if necessary, the larger doses are resumed. In dysmenorrhœa dependent on chronic endometritis, from seven to ten drops of the tincture, with an equal quantity of a solution of bromine, one drop to a pint, three times a day, have given very satisfactory results.

**JANSEN ON ACETIC ACID IN PSORIASIS.**—Dr. Jansen (*Revue Médicale*) finds acetic acid the most effectual application. After a bath of hot water and soap to soften the crusts, the scales are to be removed by a small brush. The acid is then applied by means of a sponge. Very soon the affected parts become pale, then injected, and finally slightly inflamed. There is a feeling of smarting, which lasts half an hour. The crusts fall off, and in some cases appear no more after the fifth or sixth application; in others they reproduce themselves for a longer time, gradually becoming less and less thick. Only one application in the twenty-four hours should be made, and the parts should be carefully bandaged.

**LE DENTU ON HYPODERMIC INJECTIONS OF NITRATE OF SILVER IN NEURALGIA.**—M. Le Dentu (*L'Union Médicale*) has employed with success these injections, not only in cases of obstinate neuralgia and sciatica, but for the purpose of allaying pain, no matter to what cause it may be due, and especially in cases of arthritis. Two or three drops of a strong solution (one in five) are injected into the cellular tissue; sharp pain at once follows, and at the end of three or four days a small abscess is formed, while the painful symptoms of the original malady have either diminished or disappeared. The abscess he has never found to be attended with any serious consequence, and if opened on the fourth or fifth day it will speedily heal. He believes that in cases where Vienna paste, red-hot iron, or other caustics are used, the nitrate of silver injections would be found much superior in efficacy.

**CHRISTOPHER ON A NEW PREPARATION OF IODINE.**—This preparation (described by Mr. Christopher in the *American Practitioner* for May 1877) contains, in one fluid-drachm of liquor, twelve grains of cinchona flava, one grain and a half of iodine, in the form of hydriodic acid, and one grain of protoxide

of iron. The tannin contained in the bark does not precipitate nor change colour, either by time or exposure to light; by this fact the author contends that the mixing of the above ingredients forms a definite compound, different from that usually observed in pharmacy, especially in view of the fact that these same substances, otherwise combined, behave quite differently. The mixture, according to Dr. Amory (*Boston Medical Journal*) however, does not have an agreeable taste, but does not leave the disagreeable sensations, so often complained of by patients taking potassium iodide. The cases in which this combination has been found most useful were, for the most part, those of secondary or tertiary syphilis, particularly those in which mercury had been lavishly used or "abused, cases in which it was difficult to determine to what extent the diseased condition was due to syphilis, to the abuse of mercury, or to a combination of both". Its use is also most beneficial in all cases where a prolonged action of iodine is desirable, and when its depressing effects should be avoided. Thus it produces a favourable constitutional influence in severe epidemics of boils, in cases of scrofulous diathesis, in anæmia, and in glandular enlargement. "Some of these, intolerant of some of the official preparations of iodine, tolerated and were benefited by this." Bearing in mind Melsen's observations and experiments on the use of iodine preparations, Mr. Christopher states that, "in patients who had taken mercury to salivation, but from whom all traces of the action of that drug had disappeared, salivation and tender gums reappeared almost immediately on the administration of iodide of potassium." His notes of cases would seem to show that the use of the present preparation is not followed by any such inconvenience. Certainly, in three cases in which the reporter of this abstract has used the preparation, the good effects of the drug described by Mr. Christopher have been strongly marked. One of these was a case of secondary syphilis; a second was a case of suppurative abscess in a scrofulous diathesis; the third was a case of severe and numerous indolent boils. On one, three doses of iodide of potassium made the patient so uncomfortable that the present preparation was substituted for it, and, in spite of its nauseous taste, was well borne for several weeks; only half a teaspoonful was given at first, and the amount was gradually increased, until a teaspoonful was given twice a day.

**RINGER AND GERRARD ON THE PROXIMATE PRINCIPLES OF THE NARCISSUS PSEUDO-NARCISSUS (DAFFODIL).**—The natural order Amaryllidaceæ, to which the plant forming the subject of Mr. Gerrard's notice (*Chemist and Druggist*, August 16) belongs, has a reputation for producing many plants of a poisonous character.

When the investigation was undertaken, bulbs only were obtainable, and to these Mr. Gerrard's observations were confined. By preparing an alcoholic extract, and removing from it some oil and resinous matters with ether, then treating the extract with caustic potash and ether, a residue was obtained, partly crystalline and of alkaline reaction. The crystals, which were very difficult to separate, proved not to be an alkaloid, but, so far as their examination was carried, are believed to be a neutral principle; the viscous matter, however, in which the crystals were imbedded, proved to be an alkaloid of well-marked reactions, which the author has provisionally termed pseudo-narcissine. The whole of the alkaloid obtained was converted into a nitrate, and re-

quired at once for Ringer's experiments ; so that no attempts were made to prepare from it crystalline salts of the various acids. A few drops of the pseudonarcissine nitrate, placed on a watch-glass, yielded in about a week some indifferent-looking crystals of granular aspect.

From the exhausted parent-extract was obtained, by exclusion of other matters with alcohol, an ultimate residue of a saccharine character.

Professor Ringer's experiments show that, administered hypodermically to warm-blooded animals, it causes profuse salivation, with running at the eyes and nose, also free vomiting, and slight diarrhœa. On man, administered by the mouth, it acts as on animals, producing salivation, occasionally tears, sickness, and diarrhœa ; dropped into the eye, it first slightly contracts, and then dilates the pupil. These remarks apply to the alkaloid only. The extract in some respects is far more powerful ; hence, it is probable that the salivating principle, which is the alkaloid, and the principles which produce sickness and diarrhœa, and are contained in the extract, are totally distinct. These latter points will, if possible, be determined.

ABRAHAM ON HYDROBROMIC ACID.—Mr. T. F. Abraham (*Pharmaceutical Journal*, Oct. 20) says : Hydrobromic acid, or rather the impure solution thereof as produced by the process described by Dr. Fothergill, seems to have firmly established itself as an useful agent in combination with quinine. It is found that in many cases when the use of quinine causes headache or other disagreeable symptoms, the addition of fifteen-minim or twenty-minim doses of hydrobromic acid entirely removes the difficulty. Whether its administration as an independent remedy will be found desirable, I think still remains to be seen.

It must be, however, a matter of regret that the name should have come in pharmacy to be applied to an impure and somewhat indefinite product. It is to be hoped that in our next appendix to the *Pharmacopœia* a form will be introduced that, while keeping pretty closely to the strength of Fothergill's acid, which I think has been found convenient, will furnish a fairly pure and definite product.

ABRAHAM ON CALABARIN.—Mr. Abraham (*Pharmaceutical Journal*, Oct. 20) says : Calabar bean has been the subject of fresh investigations by Messrs. Harnack and Witkowsky at Strasburg, with the result of isolating a new alkaloid, to which the name Harnack's calabarin has been given. It differs from eserine or physostigmine, in that it is insoluble in ether, and more readily soluble in water.

The discordant effects noted by different experimenters with the preparations of Calabar bean, are ascribed to the fact that those preparations contain, in varying proportions, these two alkaloids, which are in their action totally different the one from the other.

MORRIS ON SOLUTION OF QUININE FOR HYPODERMIC USE.—Dr. James E. Morris of Belleville, Texas, sends to the *New York Med. Record*, Oct. 6, the following formula for a solution, which in his practice has operated satisfactorily. Bromide of quinia dissolved in alcohol, grain for minim ; to this solution water can be added to any dilution desired. It acts promptly, and leaves no scar. One of the advantages claimed for this solution is that the alcohol prevents the development of fungi. It is

readily absorbed usually, and has a peculiar quieting effect upon the nervous system.

GREENISH ON CERIUM.—Mr. H. Greenish has recently drawn attention to the fact that commercial oxalate of cerium is sometimes largely contaminated with the oxalate of lanthanum and didymium, derived from the mineral from which it is always prepared. He has also shown that the proportions of cerium, lanthanum, and didymium vary largely in different samples. To so great an extent is this the case, and so difficult is it to prepare a perfectly pure salt, that a suspicion arises as to whether the good effects attributed by some writers to oxalate of barium may not really be due to the oxalate of lanthanum or of didymium. The very widely varying opinion as to its value as a remedy, entertained by different practitioners, may probably be traceable to the facts thus pointed out by Mr. Greenish, who states that the *Pharmacopœia* test of purity would not exclude the presence of the two metals named.

BROWN ON ALOIN AND ALOES.—Mr. A. P. Brown mentioned, at the last American Pharmaceutical Congress, that he had used Tilden's process for obtaining aloin. The result was a fair yield. Aloin has the advantage that it *does not gripe*. It has the disadvantage that it is not more active than aloes, when given in the same doses, and is much more expensive. The resin which is obtained after the deposition of aloin, has no purgative effect. Having noticed a statement that the mother liquor after the deposition of aloin, was still an active purgative, a portion was evaporated to dryness with care, and administered, but without any effect whatever. He concludes, therefore, that aloin is the purgative principle, and, after its removal, the residue is inert as a cathartic.

#### RECENT PAPERS.

- On Iodoform. By M. Lailler. (*France Médicale*, October 20.)  
A Galvanic Battery of New Construction. By Dr. G. Spamer. (*Berliner Klin. Wochenschrift*, October 8.)  
On the Treatment of Trichinosis. By Dr. Rohde. (*Ibid.*, October 22.)  
The Treatment of Acute Rheumatism with Salicylic Acid. By Dr. Ibell. (*Deutsche Medicin. Wochenschrift*, October 6, 13, 20.)  
On Quinine as an External Remedy. By C. Binz. (*Ibid.*, November 3.)

#### OBSTETRICS AND GYNÆCOLOGY.

TRENHOLME ON THE CORRELATION OF THE PSYCHOLOGICAL AND PHYSIOLOGICAL FORCES.—In the *Obstetrical Journal of Great Britain and Ireland* for October 1877, Professor Trenholme seeks to explain a correlation between the psychological and physiological forces at work upon the fœtus in utero. He relates several cases in which the fœtuses were deformed, as a result of maternal impressions during gestation. He quotes the case in Carpenter's *Physiology* of a mother applying her infant to the breast immediately after undergoing intense mental excitement, with the result of killing the child, as an illustration of the influence of the nervous system in modifying the quantity and quality of the mother's milk. Children of a second marriage often resemble a former husband ; a wife who has borne children often acquires a resemblance to her husband. In the first case the mother's blood is charged with living matter from the former child *in utero*, and which,



being present, manifests its power over the growth of the new being. In the second case, the mother comes to resemble her husband, because the fœtus imparts to her by the same agency some of its own character, which it received from its father when it commenced life. He arrives at the following conclusions.

1. The body is built up of living matter, prepared under the control of the nervous system.

2. Each tissue may appropriate, but cannot form the living matter suited to its growth.

3. Impressions made on the mind of an individual can effect changes in the growth and condition of any part of the body.

4. Mental impressions on a pregnant woman may determine the physiological conformation of the child *in utero*.

WIERRER ON SPONTANEOUS DELIVERY IN CONTRACTED PELVIS.—In the *Aerztliches Intelligenz-Blatt* for September 4, 1877, Dr. Wierrer describes a case of labour in a primipara aged 30, who was the subject of a deformed pelvis, and whose labour terminated naturally. The patient was crooked-legged, with lateral curvature of the spine, and had a pelvis in which the conjugate diameter measured 9.9 centimetres (3.9 inches.) The distance between the cristæ iliorum measured 27.4 centimetres (10.8 inches); that between the anterior superior spinous processes, 25.1 centimetres (9.88 inches.) The pelvis was small, and appeared less roomy in the right half than the left. The patient had not been able to walk until she was three years old. The head presented in the second position; the pains began at two in the afternoon, and by seven in the evening the os was fully dilated. The membranes were ruptured, and the succeeding pains drove the head into the brim, so that the right ear of the fœtus could be plainly felt. The head descended to the floor of the pelvis twenty minutes after engaging at the brim. A few more pains accomplished the rotation of the occiput forwards, and the head appeared at the vulva. The lying-in and recovery were normal.

FANCOURT BARNES, M.B.

McGRAW ON A CASE OF OVARIAN TUMOUR IN A CHILD TWELVE YEARS OF AGE.—Dr. Theodore A. McGraw, Professor of Surgery in Detroit Medical College, relates the following case in the *Toledo Medical Journal* (quoted in the *New Orleans Medical and Surgical Journal*, September). L. G., aged 12, was brought to him for examination on August 8, 1876. Three months before, it had been first noticed that her abdomen was unusually large. The enlargement rapidly increased. She had suffered no pain except from distension, but had constant diarrhœa, and was short of breath. Her urine was scanty, contained no albumen, and showed a deposit of urates. She perspired freely, and had the thin peculiar countenance of patients with ovarian disease.

Physical examination showed a barrel-shaped enlargement of the abdomen, 34 in. in circumference at the navel, bulging ribs and universal abdominal fluctuation. When she sat up, the whole abdomen, except the right lumbar region, gave a dull sound. When she lay down, the epigastric and both hypochondriac regions, as well as the right lumbar region, were tympanitic. There was no well defined tumour which could be distinguished by the touch from the ascitic fluid around it. The child was altogether undeveloped sexually, and had never menstruated. It was impossible to examine *per vaginam*, and rectal examination yielded only negative results. Dr.

McGraw tapped her, and obtained about three gallons of bloody serum, which revealed, under the microscope, but red blood-corpuscles alone, and no other organic element.

After tapping, the region of dulness became limited to the lower central part of the abdomen, but no tumour could be distinguished by manipulation. She was temporarily relieved, but very soon began to grow in size, and in four weeks time measured 36 in. around the navel.

Assisted by Dr. C. M. Raynale, of Birmingham, and Drs. Chapaton, Hawes, and Robertson of Detroit, Dr. McGraw proceeded on September 12 to remove the tumour; he found after incising the peritoneum, that the reaccumulation of fluid was largely ascitic. The tumour, which was as large as the head of a new-born child, and contained bloody serum, consisted of a very thin sac. It broke in two when seized, but was extracted without difficulty, and the pedicle was clamped. After sponging out the peritoneal cavity, Dr. McGraw found that the dependent portions of the peritoneum were stained and mottled with blood, which could not be wiped nor scraped off. It was evident that the fluid oozing from the sac had deposited its contained blood-corpuscles where they would naturally be drawn by gravity, and that they had adhered to the surface on which they lay. A drainage-tube was inserted into the lower part of the wound, and the little patient, after being properly bandaged, put to bed. She made a good recovery without a single drawback.

ROSE ON FOUR SUCCESSIVE RUPTURES OF THE UTERUS IN THE SAME PATIENT.—Dr. Rose reports this interesting case in the *Chicago Medical Journal and Examiner* for August. The patient, an Irish woman, aged 32, and the mother of two children, was taken with labour pains June 1, 1869. Five hours after labour began, rupture of the uterus occurred. Dr. Rose passed his hand into the uterus, and through the rupture into the abdominal cavity. He succeeded in finding the feet, which he brought down, and delivered a dead child, together with the afterbirth, which was also in the cavity of the abdomen. The operation was well borne, and was followed by but little peritonitis. Recovery was complete and rapid.

The next labour occurred in April 1872. After three or four hours the pains suddenly stopped and the head receded. On passing his hand into the uterus, Dr. Rose found that rupture had again taken place. He delivered, as before, by passing his hand through the rent in the womb and bringing down the feet. The patient was able to do light work in about a month. In May 1874 she was again taken with labour pains, which lasted about two hours and stopped suddenly. The cessation of the pains was followed by abdominal tenderness and feelings of faintness, but the physician who attended her told her that the pains had stopped, and might not come on for a week or more. Two days later Dr. Rose saw her, and found the os partially dilated and the uterus again ruptured. Both child and placenta lay in the abdominal cavity. Delivery was effected by version, as before, but this time the tenderness was so great that chloroform had to be given. The child had been dead so long that the skin peeled off when it was handled. The rent was transverse, and in the posterior part of the womb; "it felt as though half of the womb had been cut off with a knife." None of the contents of the abdomen escaped through the rent. Twelve days after the operation the patient was

sitting up. The last labour came on on February 28, 1876. After the waters broke, the patient said that "she felt a great movement of the child—she felt it pressing up under her ribs." Twenty minutes later Dr. Rose saw her, and, on making an examination, was just able to reach one foot with the finger. Introducing his hand, he brought down the feet, and delivered a living child. The patient suffered no more than is usual after an ordinary delivery.

KÜSTNER ON A HITHERTO UNNOTICED SIGN OF IMMATUREITY OF THE NEW-BORN CHILD.—All obstetricians are familiar with the white points which stud the tip of the nose of every new-born child. They are due to dilatation of the excretory ducts of the sebaceous follicles, and are best described as white comedones. In the course of some anatomical examinations of the sebaceous follicles in the face of the new-born child and of the embryo near term, Dr. Küstner of Halle (*Centralblatt für Gynäkologie*, June 21, and *New York Medical Record*, September 8), had his attention called to the fact that similar white points are in many cases found on the alæ of the nose, the cheeks, the forehead, and especially on the chin and under lip. These are also due to distension of the follicles by plugs of serum, but they differ from those constantly found on the nose, and are better described as milium. He has found that they are abundant in proportion to the immaturity of the foetus, and decrease in number as full term approaches, so that only the comedones on the tip of the nose are found in the child carried to full term. He has examined twenty-nine premature children, and seventy that were born at the proper time. The former always presented other signs of immaturity as well as the milium, viz., abundant lanugo, small size and weight, etc.

#### RECENT PAPERS.

- On Dysmenorrhœa. By M. Bernitz. (*Revue de Thérapeutique Médico-Chirurgicale*, Nov. 1.)  
 On Catheterism of the Fallopian Tube, and on the Causes and Effects of Dilatation of the Tube. By Dr. P. Biedert. (*Berliner Klin. Wochenschrift*, October 8 and 15.)  
 Acute Tuberculosis of the Uterus. By Dr. K. Breus. (*Wiener Medizin. Wochenschrift*, November 3.)  
 Osteomalacic Pelvis: Artificial Abortion. By Dr. Vysin. (*Ibid.*)  
 Case of Extrauterine Pregnancy. By Dr. Cohnstein. (*Allgemeine Wiener Medizin. Zeitung*, October 30.)  
 Extra-uterine Pregnancy: Ulceration of the Abdominal Wall: Gastro-tomy: Removal of the Remains of the Foetus: Recovery. By Dr. A. Leite. (*Gazeta Médica da Bahia*, September.)

#### DERMATOLOGY.

GUTTMANN ON CYSTICERCI IN THE SKIN.—Guttmann (*Berliner Klinische Wochenschrift*, No. 26, 1877) reports a case of this nature. He remarks that hitherto only sixteen cases have been published in which cysterci have been found in the skin during life, only one being reported from Austria and none from England.

His patient, a tailor 63 years old, first observed at Christmas, 1876, that there were a number of small tumours under his skin. They produced no symptoms, and were discovered accidentally. When seen in February 1877, 20 of these small tumours were counted, and a few weeks later 30. They were found chiefly on the back, then the chest, neck, arms, abdomen, and right gluteal region. They lay immediately under the skin, which was slightly raised by the larger

of them, were movable, fell tense and elastic, were of almost cartilaginous hardness, painless on pressure; they were chiefly round, but some were elongated, and were of the size of a cherry-stone or small hazelnut. They were examined microscopically. The mode of infection was not ascertained.

KAPOSI ON ZOSTER RECIDIVUS.—Kaposi gives (*Wiener Medizinische Wochenschrift*, Nos. 25 and 26, 1877) a further report of a remarkable case of zoster to which he first called attention in the same journal in 1874. The patient, a woman aged 42 at the time of her first attack, has had now nine relapses of herpes zoster. The case began as one of herpes zoster cervico-brachialis gangrænosus dexter. The first relapse was on the same part, but also in the region of the fourth and fifth ribs. The third and fourth attacks were limited to the forearm and lower part of the arm. The fifth extended over the shoulder and neck, between the seventh cervical and second dorsal vertebrae, and also over the anterior pectoral region over the fifth and sixth ribs. All these eruptions were on the right side, and, with the exception of patches over the left scapula during the first attack, and on the region between the third and sixth ribs during this and the fifth outbreaks, in the same nerve-territory, that, namely, of the right cervico-brachial plexus. The subsequent attacks were on parts supplied by other nerves. The sixth was a zoster lumbo-sacro-cruralis of the right side; the seventh, eighth, and ninth zoster cervico-brachialis of the left side. Each attack ran the ordinary course of herpes zoster. The author speculates on the probability of the phenomena in this singular case being produced by a vascular tumour of the spinal cord.

G. THIN, M.D.

KAPOSI ON LICHEN RUBER ACUMINATUS AND LICHEN RUBER PLANUS.—Kaposi (*Wiener Medizinische Wochenschrift*, No. 35, 1877) remarks that English and American writers, in substituting the name lichen planus for lichen ruber, confound two distinct forms of the disease. In that originally described by Hebra the characteristic papules are red, pointed, conical, and have scales. They do not occur in groups. There is another form, which has been described by English-writing dermatologists, and which Kaposi infers they have alone observed. In it the papules are flattened, do not scale, and have a tendency to form groups or plaques. For this latter form the author recommends the exclusive use of the term lichen ruber planus; for the former, lichen ruber acuminatus. The distinction, he observes, is recognised by Hebra. The author gives details of cases of lichen ruber planus observed in Vienna, and also remarks that in some of the cases intermediate forms are observed, both varieties being in one instance found on different parts of the same patient. In both varieties the disease yields to arsenic.

[Examples of both these forms of lichen ruber, as well as intermediate cases, have come under the reporter's notice in London.—*Rep.*]

KAPOSI ON MOLLUSCUM CONTAGIOSUM.—The author (*Archiv für Dermatologie und Syphilis*, 3 Heft, 1877) proposes that the molluscum contagiosum of Bateman shall be known as molluscum atheromatousum, to distinguish it from the molluscum contagiosum of modern authors which, from its wart-like appearance, is known as molluscum verrucosum. These varieties are essentially the same anatomic-



cally, both being affections of the sebaceous glands. In molluscum atheromatosum the gland itself is chiefly affected; in molluscum verrucosum the morbid changes begin in the ducts and lanugo hair-follicles, from which they extend to the glands.

The "molluscum corpuscles" of authors are epithelial cells with altered cell-contents.

Kaposi does not believe that the disease is contagious, and proposes that the term contagiosum should be no longer used.

**TARNOWSKY ON THE EFFECTS OF IRRITATION OF THE SKIN IN SYPHILITIC PERSONS.**—Tarnowsky (*Archiv für Dermatologie und Syphilis*, 1 and 2 Heft, 1877) states that, when the skin of a person suffering from syphilis is irritated by caustics or by inoculation of various morbid products, the course of the wound differs from that which is observed in the skin of healthy persons subjected to the same influences, the amount of reaction and induration varying according to the interval which has elapsed since the date of the infection. The results of a large number of experiments have convinced him that the soft chancre and the infecting syphilitic sore are the product of two distinct virus, which are not interchangeable. The sores produced by Bidentkap, Reder, and Köbner on syphilitic persons by inoculation, and which they have described as soft chancres, are, he maintains, distinguishable by their form, course, absence of chancre-buboes, and results when inoculated from the true soft chancre; and are simply the characteristic effects of irritation of the skin in the syphilitic. In opposition to the theory that the soft chancre is produced by concentration of the syphilitic virus, he states that he has practised inoculations with the chancre virus diluted to various degrees, but has never produced thereby any other form than that of the soft chancre.

**MICHELSON ON OVA OF OXYURIS VERMICULARIS ON THE HUMAN SKIN.**—Michelson (*Berliner Klinische Wochenschrift*, No. 33, 1877) describes the case of a boy, in whom an eczematous condition of the scrotum was produced by the ova of oxyuris vermicularis. They were embedded in the epidermis. The boy was known to have long suffered from this entozoon. Its conveyance to the anterior surface of the scrotum (the posterior surface being free) was due to a habit the boy had of tucking the front skirt of his shirt between his hips. G. THIN, MD.

#### RECENT PAPERS.

On Iodic Purpura. By Dr. A. Fournier. (*Revue Mensuelle de Médecine et de Chirurgie*, September 1877.)

On the Treatment of Psoriasis and Arsenical Medication. By Dr. Lallier. (*France Médicale*, September 15.)

On Acne. By Dr. Lallier. (*Ibid.*, September 22.)

The Use and Action of the Continuous Water-Bath. By Dr. Hans Hebra. (*Wiener Medizin. Wochenschrift*, September 8, 15.)

On Pellagra. By M. H. Gintrac. (*La Province Médicale*, July 25.)

On Herpes. By Dr. Guibout. (*L'Union Médicale*, July 28.)

Leprosy in China. By Dr. Max Durand-Fardel. (*Gazette Médicale de Paris*, Nos. 26, 28, and 30.)

A Study of Venereal and Cutaneous Diseases. By M. Achille Dron. (*Lyon Médical*, July 29.)

Case of Generalised Leprosy in the Human Subject. By M. J. Rendu. (*Ibid.*, August 1877.)

On Leprosy. By M. Hillairet. (*Le Progrès Médical*, September 29.)

On Erythema. By Dr. Laillier. (*La France Médicale*, October 6.)

Symptoms and Treatment of Psoriasis Universalis. By Dr. Kaposi. (*Wiener Medizin. Wochenschrift*, Nov. 3.)

#### MEDICAL CHEMISTRY.

**STRÜMPPELL ON THE OCCURRENCE OF HYPOSULPHITES IN HUMAN URINE.**—Schmiedeberg and Meissner found hyposulphuric acid to be an almost constant constituent of the urine of the cat, and to be frequently present in that of the dog. Strümpfell (*Zeit. für anal. Chemie*, 1877, Band. XVI) has now detected its presence in that of a patient suffering from typhus fever. He was led to search for this acid through his attention having been directed to an unusual reaction which the liquid exhibited with silver-solution during a volumetric determination of the chlorine, a reaction which those who perform analyses of this kind would do well to study. He found in the case which he examined that 1.5 grammes (about 23 grains) of sulphur passed from the body every twenty-four hours in other forms than that of a sulphate. Calculated as hyposulphite, it would amount to a daily yield of 2.25 grammes of this salt.

**JEANNERET ON THE DECOMPOSITION OF GELATIN AND ALBUMEN BY PANCREAS, IN THE ABSENCE OF AIR.**—A long series of physiological experiments by M. J. Jeanneret, are detailed in the *Journal für Praktische Chemie*, Nos. 6 and 7, 1877, the results of which lead to the following conclusions. The decomposition of hydrocarbons and of substances containing nitrogen by the bacteria in pancreas takes place, not only in the presence of air, but also in its absence, the products being in both cases alike, the latter process, however, requiring much more time. The complete development of the so-called "Kopfchen" bacteria is entirely independent of the presence of air, but requires the presence of bodies containing nitrogen. They do not make their appearance in a pure saccharine solution.

**NENCKI ON LEUCINE.**—Nencki (*Journal für Praktische Chemie*, 1877) describes fully a leucine obtained by him in the decomposition of albuminoid gelatin with pancreas, which differs from the ordinary form, in being extremely soluble, and possessing a sweet taste.

**RAJEWESKI ON THE PRESENCE OF ALCOHOL IN THE ORGANISM.**—M. A. Rajewski (*Archiv der Physiologie*), having injected some rabbits with alcohol and distilled their bruised organs with water, obtained the reaction of iodoform in all cases. But he also obtained the same reaction from rabbits which had not received any alcohol, and which had been operated upon as a check experiment. Hence the detection of alcohol by this method is not trustworthy in the case of these animals.

**SCHWARTZ ON THE PRESENCE OF METHYLAMIN IN THE ORGANISM.**—On distilling faecal matter with lime, M. H. Schwartz (*Chemische Centralblatt*) obtained ammonia mixed with a small quantity of methylamin.

**MERING ON FORMATION OF GLYCOGEN IN THE LIVER.**—According to Von Mering (*Pflüger's Archiv*), glucose, sucrose, lactose, inverted sugar, inulin, lichen, glycerin, arbutin, gelatin, and the albuminoids, promote the formation of the glycogen. Inosit, quercit, and the fats do not produce it.

## RECENT PAPERS.

Operative Interference in Croup. By Dr. Glynn Whittle. (*Dublin Journal of Med. Science*, October.)

## TOXICOLOGY,

FELTZ AND RITTER ON ACUTE POISONING BY ACETATE OF COPPER.—Messrs. Feltz and Ritter arrive at the following conclusions (*Journal de Pharmacie et de Chimie*, May). 1. The acetate of copper is more active than the sulphate. 2. The symptoms are much more intense when the animals are empty. 3. The food and drink take a well-marked taste from the presence in them of acetate of copper. 4. The appearance of jaundice indicates that in subacute poisoning by the salts of copper there is produced a supersecretion of bile, analogous to that occurring in poisoning by arsenic, antimony, and phosphorus.

The poisonous dose appears to oscillate between 0.45 and 0.5 gramme per kilogramme of body-weight. Death occurs in 6 to 12 hours after mucous, bilious, and bloody vomiting, a serous and sanguinolent diarrhoea, and rectal tenesmus, followed by paralysis of the sphincter ani. Death is immediately preceded by tetanic convulsions. The loss of weight varies from 750 to 1,200 grammes, and the temperature falls to 95° Fahr.

Analysis gives the quantity of copper found in the liver as from 31 to 34 milligrammes in livers weighing 290 to 350 grammes. The urine of dogs poisoned by the acetate or sulphate of copper always showed notable proportions of the copper salts; 1,600 cubic centimetres contained about 13½ milligrammes. T. CRANSTOUN CHARLES, M.D.

WEBSTER ON POISONING BY CONTACT OF THE POWDER OF RESIN OF PODOPHYLLUM.—Dr. David Webster relates, in the *Boston Medical and Surgical Journal* of June 9, the case of Thomas C., aged 17, assistant in a wholesale druggist's establishment, who had consulted him at the Manhattan Eye and Ear Hospital, on January 10, 1877.

On the 8th, he was engaged for five hours in powdering resin of podophyllum in a two-gallon mortar by means of a heavy pestle. The volatile powder flew up into his face and eyes.

The next morning, while washing his face, he first noticed that his eyes were red and the skin about them discoloured. The discoloration extended over the whole of his face, his forehead, and the front part of his neck during the day, and the following night his eyes became so painful as to prevent sleep.

When he presented himself at the hospital, all the parts which had been exposed to contact with the powder were of a yellowish-red colour, but not swollen to an appreciable extent. The ocular conjunctivæ were much injected, the palpebral only slightly, the pupils small, the eyes painful and sensitive to light. Dr. Webster instilled a two-grain solution of sulphate of atropia four times, at intervals of fifteen minutes, before he succeeded in dilating the pupils. There were no signs of iritis, but there seemed to be a reflex spasm of the sphincter iridis. The patient had a two-grain solution of atropine to drop into each eye three times a day,

and a borax wash for the whole affected surface, to be applied also three times a day.

On the 13th, his eyes had resumed their normal appearance, except that the pupils were dilated; and the skin of the face and neck had lost its unnatural colour. A few small pustules were scattered over the chin and throat. The atropine was stopped, and he was directed to continue the borax wash until the pustular eruption should have disappeared.

Mr. C. informed Dr. Webster that he knew of three other druggists' assistants, who had been similarly affected from the contact of powdered resin of podophyllum.

WATKINS ON POISONING BY THE ESSENTIAL OILS OF SAVINE, PENNYROYAL, AND TANSY.—Dr. W. H. Watkins relates the following case in the *New Orleans Medical and Surgical Journal* for August. On March 30, at 10.30 p.m., he was called to see Mrs. —, aged 26, and the mother of three children. Her husband informed him that she had failed to have her menses on the 25th, and, to bring them on, had taken on that evening an unknown quantity of the essential oils of tansy, savine, and pennyroyal. He had retired to bed, and about ten o'clock was called up by his wife, who complained of very peculiar sensations, and was very much frightened. On reaching the house, Dr. Watkins found Mrs. — sitting in a rocking chair; she was very much excited, pulse weak and frequent, skin pallid, and bathed in profuse respiration. On questioning her, she complained of ringing in her ears and a feeling of stiffness in her back and limbs. At this moment she lost consciousness, and was seized with a violent clonic convulsion, permanent opisthotonus, and general twitching of muscles of face and extremities. She was carried to bed, when the paroxysm soon passed off and she regained consciousness. At this time her breath was laden with the aromatic smell of the oils. On questioning, she said that she took about twenty drops of the oil of tansy and fifteen drops of each of the other oils. She complained of ringing in her ears, and a feeling as though a bandage was applied to her eyes. The pupils were dilated, pulse 120, temperature normal, respiration sighing. An emetic of ipecacuanha and tartar emetic was given, but the stomach did not respond for twenty minutes. The matter vomited presented evidences of the oils, being very aromatic, the exhalations being irritating to the eyes. Vomiting was kept up by the administration of mustard and hot water. Her prostrated condition was increased by the vomiting. She still complained of the noises in her ears and tight feeling about the eyes; felt a tension of the muscles. About fifteen minutes after vomiting she again lost consciousness, but had no convulsion. Dr. Watkins gave 30 grains of bromide of potassium, with 15 grains of hydrate of chloral. Her pulse was now 100, and her temperature was 99½°; in an hour her temperature was 100° and her pulse 95. She still complained of the same feelings in the ears and eyes, but in a less degree. The next morning her temperature and pulse were normal, but she was greatly prostrated.

BRUET ON DYNAMITE.—In a Paris thesis, M. Bruet sums up with the following conclusions as to the toxic properties of dynamite in nitro-glycerine (*Annali Universali di Medicina*, August). 1. Nitro-glycerine is a poison, the energy of which is in direct proportion to the rapidity of its absorption. 2. It is most violent when quickly absorbed; a few



drops are sufficient to strike down an animal in five minutes, and death follows in clonic and tonic convulsions. 3. It is less dangerous when absorbed slowly, and in this case kills by asphyxia, the fatal dose being rather high. 4. A man exposed chiefly to the absorption of nitro-glycerine has rather to fear the chronic or slight results than acute poisoning or death. But he should avoid all conditions which may expose him to rapid absorption of the poison, as in this case there would be danger of sudden death. 5. For these reasons, it is not superfluous to take precautions against exposure to an atmosphere in which particles of dynamite are given off.

A. HENRY, M.D.

#### RECENT PAPERS.

Note on a Case of Poisoning of a Pregnant Woman by Liquor Ammoniac. By M. François. (*Lyon Médical*, April 27.)

Venomous Animals. By Sir J. Fayrer, M.D. (*Edinburgh Medical Journal*, August.)

A Case of Morphinism. By Dr. M. Brée. (*Wiener Medizin. Wochenschrift*, August 18.)

### REPORTS OF FOREIGN SOCIETIES.

#### ACADEMY OF MEDICINE IN PARIS.

August. *Causes of the Virulence of Anthracoid Blood.*—M. Colin communicated the results of his experiments for the purpose of determining the causes of the virulence of anthracoid blood. Ten years ago, M. Davaine announced that the presence of bacteria was the only agent in producing the contagion, and, to prove it, M. Pasteur reproduced anthrax by inoculation with bacteria alone; afterwards, as a counterproof, he inoculated with blood free from bacteria, without obtaining any result. M. Colin attempted a criticism of these researches. He was of opinion that M. Pasteur had not succeeded in disengaging the bacteria from all the figurate elements and the soluble parts of the blood; whatever dilution he attained in his successive experiments, there remained enough of them to bring virulence. On the other hand, if the anthracoid blood, deprived of bacteria, no longer possessed its virulent properties in M. Pasteur's experiments, it was because, in order to obtain this separation, he filtered the blood through plaster, and the osmosis through the plaster might well alter the ferments, as it altered alkaline substances, which had been proved by Graham. There was also another objection, not in relation to the method, but to the entirety of the facts. If an animal be inoculated with anthrax, and the blood taken from this animal be used for fresh inoculations, it is found that after a few hours it communicates anthrax, although bacteria are not yet perceived in it. Secondly, the serum obtained by allowing anthracoid blood to coagulate, does not contain bacteria, for they have been retained by the fibrine of the clot, and yet it can produce anthrax. Finally, a half-time fetus found in the uterus of a cow which had died of anthrax was loaded with bacteria. The blood taken from the heart of this fetus without change, inoculated into other animals, remained innocuous. Independent of these facts, there are modifications in the properties of anthracoid blood which do not harmonise with the part attributed to bacteria. This blood, extracted from a living animal which has reached the last stages of the disease, assumes from

the aspect of its toxic properties four successive distinct conditions, viz.—1. Anthracoid virulence; 2. An indifferent condition; 3. Septicæmic virulence; 4. Purely toxic activity. Now, it is precisely at the moment when the bacteria produce the corpuscle-germs of which M. Pasteur speaks, in great quantity, that the blood loses its virulence. M. Pasteur attributed the disappearance of the virulence to the presence of vibrios of putrefaction, which, being anaerobic, have there pullulated, where the aerobic bacteria have begun to be absorbed. But according to his experiments M. Colin affirmed that the anaerobic vibrio of putridity is not an obstacle to the evolution of the vibrio or of bacteria. He has likewise, by mixing anthracoid blood with alcohol, seen it become inert, whilst, according to M. Pasteur, the corpuscle germs of the bacteria can resist the action of alcohol. In opposition to the doctrine of virulence in consequence of bacteria, M. Colin further insisted on the mode of evolution, its first manifestations, and the clinical analysis of the disease. In an animal in which anthrax is developed slowly, the symptoms are already manifest, the blood has already lost its usual physical characteristics, without any bacteria having been discovered, since they only make their appearance at the last moment. Finally, anthrax is an affection of certain localities, of certain atmospheric conditions, of certain conditions in the existence of animals; and in this relation it is in the category of diseases which originate in the influence of media, of those which appear to come to life in the presence of a concatenation of determinate circumstances. M. Cohn wound up his communication by the enumeration of the principal changes of the blood, which changes very much before the appearance of the bacteria. "All these changes", he adds, "mostly occur without the aid of bacteria, and it is perhaps to them that the virulence is due."

August 7. *Maté.*—M. Gubler read a paper by M. Henri Byasson on maté, or Paraguay Tea (known in England as guarana). This substance contains 1.85 per cent. of an alkaloid chemically identical with caffeine. But in the same way that theine and caffeine, notwithstanding their isomerism, are far from being identical substances, from the aspect of their molecular structure and of dynamisation, so the active principle of maté is sufficiently distinct from these two modifying agents of the nervous system to merit a special name, *matéine*. It is known that black tea contains 1.90 per cent. of alkaloid; and coffee .98 to 1 per cent. But the condition of the superiority of the coffee, tea, maté, and cocoa which compose the group of dynamophorics resides in the pharmacodynamic power of the active principle much more than in the ponderable quantity, and therefore it is that coffee carries away the palm from its congeners. However, if the dynamic value of maté is not so considerable as travellers report, and if, according to M. Le Roy de Méricourt, it is not without some objectionable qualities, this substance none the less constitutes a precious dynamophoric.

*Poisoning by Agaricus Bulbosus.*—M. Gubler read a report on a memoir by Dr. Oré on poisoning by agaricus bulbosus, of which we have already given the conclusions (see LONDON MEDICAL RECORD for June 1877). The active principle of agaricus bulbosus is a soluble substance of the nature of the alkaloids, and not an organised dust which is detached from the proligerous layers of the mushroom. Its generalised effects imply its diffusion in the organism by means of the circulation of the blood. If no one

has ever succeeded in determining its presence in the blood of poisoned animals, it is because the period of parenchymatous intussusception had already succeeded to the period of circulatory diffusion. Dr. Oré endeavoured to establish the absolute subordination of all the symptoms and lesions to the toxic impregnation only of the nervous centres, and to the functional troubles which spring immediately from them. M. Gubler believed that here it rather concerns something analogous to what occurs with injected emetine, which does not make its action felt on the spinal bulb, but after absorption and circulation proceeds to produce its special effects on the digestive apparatus at the moment when its elimination by the numerous glands puts it in contact with the peripheral extremities of the par vagum. Neither does he admit the physiological identity of strychnine and the active principle of agaricus bulbosus, notwithstanding the analogy of their tetanic effects, and he prefers to keep at least provisionally agaricus bulbosus amongst the acro-narcotic poisons, in the same rank as the mushrooms. It must be remarked, in conclusion, that vinegar, far from being an antidote to amanita bulbosa, is only a solvent and vehicle for it.

August 14. *Etiology of Typhoid Fever.*—M. Guérin enumerated his opinions with regard to the pathogenesis of typhoid fever, in the form of propositions. He touched on the following points. 1. The special diarrhoeal matter of typhoid patients contains, when it leaves the animal economy, a toxic principle, resulting from the fermentation of the stercoraceous matters retained and accumulated at the termination of the small intestine behind the ileo-cæcal valve. 2. The organic lesions, hitherto considered as the specific characteristics of typhoid fever, injections and ulcerations of the mucous membrane, changes of Brunner's glands, Peyer's patches, and the mesenteric glands, are effects of the virulent action of the typhic matters on these parts, and the functional disturbances or symptoms of the disease are at once the result of the penetration of the same matters into the organism, and the organic changes there produced by them. 3. The complications which show themselves in the course of typhoid fever under the form of meningitis, pleurisy, pneumonia, and other characteristic affections, are only more sharply defined localisations of the toxic principle, as those of these diseases which begin at once with typhic symptoms are themselves but primary effects of the stercoraceous poisoning. 4. The typhoid poison engendered by stercoraceous fermentation incessantly diffuses itself outwards by all the excretory passages of the animal economy, whence the transmissibility of the disease and the formation of foci of infection susceptible of reproducing it under the endemic and epidemic form. M. Guérin based his first proposition on the experiments he has already communicated to the Academy at the meetings of February 27 and April 24 (see LONDON MEDICAL RECORD for April and June). He insisted on the stagnation of fecal matters at the outset of the disease behind the ileo-cæcal valve, in consequence of the paralytic atony of that portion of the intestine. A fermentative process is then set up, of which the existence is made manifest by borborygmus, tympanites, the expulsion of gases and characteristic liquids, and which has the effect of engendering the toxic principle. At this moment, the disease properly so-called commences the stercoraceous poisoning, that is to say, the direct and immediate action of the toxic substance on the parts with which it comes into

contact, then its indirect or distant action on the whole animal economy, which is invaded by it. The second proposition is in opposition to the ideas generally admitted, and will meet with more than one opponent. M. Guérin has set himself to show that the number, the distribution, the relations, and the variable gravity of the lesions, are in perfect harmony with the stagnation and the accumulation of the toxic liquids of the disease. The changes of the mucous membrane, properly so-called, represent in their modes, stages, and succession the different periods, phases, and degrees of the disease. These lesions are not, as nearly all writers state, situated exclusively at the level of the patches or glands; they are met with indiscriminately on all parts, first in the form of spots, then with a little infiltration, with or without softening, finally in the condition of complete ulceration. The mesenteric glands attacked always correspond to an attacked portion of the intestine, the mucous membrane, glands, or ulcerated patches. M. Guérin comes to the conclusion that the poison passes from the intestine to the mesentery, from the mesentery to the glands contained in it; that the glandular changes are but the consequence and of the testimony to this passage; and finally, that the successive changes of the intestine and the mesenteric glands are indeed the product and the effect of the same destructive agent, and that this agent is really the virulent typhoid ferment.

August 21. *Anthrax.*—In a letter addressed to M. Bouley, M. Pasteur replied to M. Cohn's strictures in reference to his communication on the functions of bacteria in the genesis of anthracoid diseases. M. Cohn had charged him with only finally using a more or less concentrated dilution of anthracoid blood in his experiments. M. Pasteur defended the method he had followed in his successive cultivations of bacteria, and maintained that the virulence of the liquid he finally obtained could not reasonably be attributed to a virulent agent existing in the original drop of blood, if it be remembered that this drop of blood was diluted with a number of drops of urine represented by the ascertained unity of more than two hundred zeros. M. Cohn also objected that filtration on plaster may change the ferments and the soluble virulent agents. Now if the anthracoid blood be diluted with plaster and water, and a portion of this mixture be used for inoculation, charbon is produced; and, besides, if filtration through plaster leaves any doubt, that which has been made by a simple decantation in the cellars of the observatory ought to be sufficient. According to M. Cohn, it would be impossible to communicate charbon with blood which does not contain bacteria. He had been misled by the inadequacy of the microscope to make manifest the presence or absence of bacteria when the blood only contains an infinitely small number. To make their presence evident, it is enough to place a drop of the same blood in a small quantity of sterilised urine, in which they multiply in such quantities as to be visible to the naked eye; whenever the urine remains sterile, the blood never communicates charbon. M. Pasteur also considers that experiment of M. Cohn's erroneous, in which he once saw blood charged with bacteria which did not communicate anthrax. M. Cohn ought to have proved at the same time that there were really any bacteria in the case.

*Salicylic Acid.*—M. G. Sée replied to the communications which had been made on salicylic acid, and again insisted on certain points. In the first instance, he protested against the invasion of so



many more or less well defined salicylic preparations, as these compounds only act in virtue of the salicylic acid contained in them. The salicylate of soda should be relied on, as it satisfies all indications. The administration of solid preparations likely to irritate the oesophagus and stomach should be avoided. Less than 45 grains of the salicylate has no action. Large doses should be avoided. Though it was true that MM. Oulmont and Jaccoud obtained lowering of the temperature by their use, the defervescences had not lasted. In fever of tuberculous origin the condition of the patients did not allow this medicine to be thought of, and in intermittent fever its febrifugal qualities amounted to nought. As to the successful results obtained by M. Oulmont in typhoid fever, they were far from evoking enthusiasm, besides which, recent statistics contradicted these results. In acute articular rheumatism the proper dose was from 120 to 150 grains. M. Oulmont had not succeeded by having gone below this standard: in going beyond it (say 225 grains in a day), M. Jaccoud had had untoward occurrences. M. Sée did not share M. Gueneau de Mussy's fear with regard to the reflection of the disease on the internal organs. If these were attacked, it was not by retrocession but by propagation from without inwards, and if formerly cerebral rheumatism was rare, it was because observers were less competent. Finally M. Sée did not admit, as Immermann and Stricker believed, that salicylic acid was a specific for rheumatism. Powerless in certain rheumatic affections, it possessed three perfectly well-defined properties: 1. It eased pain; 2. It diminished articular congestion; 3. It favoured the elimination of uric acid and the urates.

August 28. *Salicylic Acid*.—M. Sée continued his communication on salicylic acid. He said that numerous successful results of this drug in chronic rheumatism had been communicated to him in corroboration of his early researches. If MM. Jaccoud and Gueneau de Mussy had not been more fortunate, the cause lay in the want of persistence in the treatment. With regard to gout, M. Gueneau de Mussy had maintained that the suppression of the attacks might bring on cerebral symptoms, cardiac disturbances, and perturbations of the digestive functions. Might not these symptoms, however, be the result of former lesions, which had remained latent, but showed themselves on the occurrence of articular gout, and not through the disappearance of the arthritis? Admitting the theory of metastasis, which was far from being proved, it could only be due to the driving in of the uric acid into the blood in consequence of the reabsorption of the acid deposited in the articulations. It would also be understood that this metastasis was produced by violent internal and external medication, such as the application of cold, leeches, &c. But salicylate of soda was far from being a repellent; it was absolutely the contrary; it was an eliminator of the morbid principle of uric acid accumulated in the blood. The doses to be employed were, in acute gout, 120 grains per diem; after the cessation of the pains, 90 grains during from eight to fifteen days, then 60 grains. In chronic gout the daily dose was at first 90 grains until the cessation of the pains, and the diminution of the congestion; then 60 grains for an indefinite period.

Sept. 4. *Stibio-dermic Medication in Rheumatism and Gout*.—M. J. Guérin read a note on the abortive treatment of acute localisations of articular rheumatism and gout. It referred to the stibio-dermic method, which had been perfectly successful in his hands in the early accidents of acute coxalgia. Three

or four anointings in the twenty-four hours with an ointment containing one part of tartarised antimony to two of lard, caused a notable lessening of the pains, if not their complete disappearance. The pains ceased in virtue of a dynamic remedial action, and not under the influence of any revulsion whatsoever. The same results were obtained in an attack of gout, when it is only the precursor of a definitive localisation; three or four applications of a portion of the ointment of the size of a hazel-nut were sufficient to avert an attack. When it arrived at the stage of activity, the use of a flying blister, placed in the centre of the swelling, cut down the attack in a few days.

*Etiology of Typhoid Fever*.—M. Bouchardat made a communication relating to M. J. Guérin's experiments on the etiology of typhoid fever. Where the diseases of the human race are concerned, the rabbit is, according to the conditions, too little sensitive a reagent. M. J. Guérin himself owned that he neither believed he had given nor wished to give human typhoid his rabbits; but then what was the use of his experiment in the question under consideration? It had long been known that putrefied matter, injected under the skin or into the veins of rabbits, kills them. There is no relation between these phenomena and the complete production of typhoid fever. M. J. Guérin answered that the only fact he wished in the first instance to establish was that the fæcal matters of typhoid patients possessed certain toxic properties, which are not possessed by any other fæcal matters.

September 11.—*Typhoid Fever*.—M. J. Guérin showed to the Academy a piece of intestine taken from a typhoid patient who died at the Hôtel-Dieu on the seventeenth day of the attack. This specimen gave an opportunity of following, step by step, the disorders caused by the vesicant and corrosive action of the morbid menstruum. It afforded general and immediate confirmation of his first observations in relation to the progress and distribution of the anatomical changes in relation with the etiology of typhoid fever, formerly submitted by him to the Academy. Not only Brunner's glands and Peyer's patches, but also portions of independent and intermediate mucous membrane showed all degrees of ulceration, from simple erosion to complete destruction.

*Physiological Action of Salicylate of Soda*.—Dr. Laborde read a paper on this subject, in which, from his experiments on dogs, he drew the following conclusions. The physiological action of salicylate of soda acts in a predominant and elective manner on the phenomena of sensibility of pain; the mechanism of this action resides in the influence exercised by the chemical substance, not on the conductive power of the sensitive nervous cord, but on the elaborating and recipient centre of the peripheric impressions. It is principally and, perhaps exclusively as an analgesic, that the acid intervenes in the cure of articular rheumatism.

#### ACADEMY OF SCIENCES IN PARIS.

July 16. *Septicæmia*.—M. Pasteur communicated his paper on septicæmia, announced by him at the preceding meeting (see LONDON MEDICAL RECORD for October.) The principal propositions formulated were as follows. 1. The blood of an animal in full health never contains microscopic organisms in their

germs. It will not putrefy in pure air, because putrefaction is always due to microscopic organisms of the vibronic kind; and, spontaneous generation being out of the question, the vibrios cannot appear of their own accord. 2. The blood of an anthracoid animal does not contain any other organisms than bacteria. But bacteria are exclusively aerobic organisms, and on this account they take no part in putrefaction. Therefore, anthracoid blood will not putrefy by itself. In the dead body, things go on in a different manner; anthracoid blood soon becomes putrefied, because all human corpses give an asylum to vibrios coming from without, that is to say, in the space of the intestinal canal, always filled with vibrios of all kinds. These, directly they are not troubled by the normal life of the tissues, bring on a prompt disintegration. 3. Bacteria disappear from fluids in the presence of carbonic acid gas. In pure anthracoid blood, that is to say only containing the corpuscle germ, this disappearance is absolute in course of time. Anthracoid blood exposed to contact with carbonic acid may lose all anthracoid properties while simply at rest. It is an error to think that putrefaction destroys the virulence of carbon. 4. The development of bacteria cannot occur, or only occurs with great difficulty, in the presence of other microscopic organisms. These explanations enable us to understand why, after a certain time subsequent to the death of an animal suffering from charbon, bacteria cannot be found in the blood. M. Pasteur in fact discovered that the blood of a sheep, sixteen hours after its death from charbon, only contained anthracoid bacteria, whilst those of a horse twenty hours after death likewise contained putrefactive vibrios. The body of a cow, forty-eight hours after death, contained a preponderating quantity of these vibrios. M. Pasteur afterwards detailed the results of inoculations performed on animals with anthracoid blood and putrefied blood. The experiments had given him reason to conclude that septicæmic disease is completely distinct from anthracoid disease. Septicæmia is besides not an unique disease; so many germs of vibrios, so many different septicæmias, mild or serious.

*Gastric Juice.*—M. Charles Richet communicated his researches on the acids of the gastric juice. His experiments showed that there are in the gastric juice one or several acids soluble in ether. The soluble acid would be in great measure sarcolactic acid.

*The Blood in Diphtheria.*—MM. Bouchut and Dubrisay communicated the results of the counting of the blood-corpuscles in diphtheria. The numerations were made by Hayem's process; and the writers proved that in diphtheric angina the number of white corpuscles is considerably augmented, whilst that of the red corpuscles is diminished. The increase of the white corpuscles varies directly with the gravity of the disease.

*Influence of Excitement of the Organs of the Senses on the Heart and Blood-Vessels.*—MM. Conty and A. Charpentier had made experiments on dogs rendered motionless by curare, and kept alive by artificial respiration. By acting successively on the various organs of the senses, they proved that the sensorial perception acts on the pulsations of the neck and on the arterial tension. This action does not occur only by the medium of the medulla oblongata; an ulterior cerebral process, which may be called emotional, is necessary. The brain is, therefore, a sensitive surface which reacts on the neck and the vessels through the mesocephalic centres.

*Septicity.*—M. V. Feltz communicated experiments

showing that neither pure compressed oxygen nor air destroys the septicity of putrefied blood. In a note presented to the Academy, on March 1, 1875, the writer demonstrated that toxic putrefied blood did not lose its septic qualities in compressed air. He had since been able to make experiments with a new apparatus which allowed a pressure from fifty to sixty atmospheres. The results obtained were as follows. 1. Putrefied blood loses nothing of its septicity by its more or less prolonged contact with the air or compressed oxygen at high tension. 2. Compressed air has no action on the organised ferments of which the microscope demonstrates the existence in putrefied blood. 3. Pure oxygen compressed at high tension long-continued destroys and immobilises the oscillating rods and the vibrios, but has no action on the cocco-bacteria or the conoid spores, which explains the persistence of septicity. In this respect there is a great similarity of action between compressed oxygen and the sun-drying of putrefied blood. 4. The examination of the blood of poisoned animals does not leave the least doubt as to the reproduction of the whole vibronic series in similar circumstances. 5. It is impossible by the methods of experimentation above described to separate in putrefied blood the organised ferments from the diastasic ferments: the conclusions stated on June 4, therefore, remained intact; that is to say, the agents of septicity in putrefied blood reside in the organised ferments.

*Ectopia of the Heart.*—M. François Franck sent a note on a case of congenital ectopia of the heart, with evagination at the umbilicus. In a woman, aged 24, the heart formed a tumour of the size of a turkey's egg in the epigastrium: the skin covered it, and, in consequence of its looseness, in no way impeded its movements. The ventricular mass, which alone formed the hernia, could be taken up in the open hand; the auricles remained covered by the lower extremity of the sternum and the edge of the costal cartilages. The tumour formed a conoid projection of which the long axis lay in the antero-posterior median plane of the body; the apex was slightly lowered towards the left. The ventricular mass raised the skin at each systole, at the same time turning from the left to the right round its large axis; it then returned, becoming hard and globular, and the apex formed the culminating portion, the entire rising taking place round a transverse axis passing through the base. During this movement of projection forwards and upwards, an increase of the length of the vertical diameter was noted. This diameter, which was 2.75 inches at the end of the diastole, became 3.35 inches at the outset of the systole. Auscultation of the region of the apex made two sounds audible; the first coincided with the systolic hardening of the heart, and consisted in a short valve-sound, which was detached from a more prolonged sound, lasting during the complete systole; this latter was probably a muscular sound. The second sound at the apex was but a propagation of the second sound of the base; this might be ascertained by observing that it became stronger in proportion as the stethoscope was raised from the apex towards the base. M. Franck could not determine a distinct focus of auscultation for each ventricle by following the right and left sides of the heart. When the funnel of the stethoscope was applied at the level of the articulation of the last two costal cartilages of the right side with the corresponding edge of the sternum, an anæmic soft and thready souffle was heard in the first period; in the second



the valve-sound at the seat of the pulmonary artery was again heard. The writer was of opinion that this chondro-sternal point, at the level of which the soufflé of the first period was perceived, corresponded to the seat of aortic auscultation, for the soufflé was lost on ascending the line of the right chondro-sternal auscultations, and was again met, with all its characteristics, in the right carotid at the level of the anterior edge of the sternocleidomastoid muscle. In addition to congenital ectopia of the heart, this woman had an umbilical hernia 3.14 inches in diameter.

July 23. *Bacteria*.—Dr. Charlton Bastian, as is known, believes that bacteria, which he has found in urine neutralised by potash and heated in a stove at 50°, arise from spontaneous generation. M. Pasteur combated this assertion, and attributed three causes of error to Dr. Bastian's experiment. 1. The germs of the bacteria may exist in the urine. 2. They may exist in the solution of potash. 3. They may proceed from the vessels. In these three cases boiling does not destroy them. Dr. Bastian had eliminated the two first-named causes of error by considerably raising the temperature. But in eliminating the third-mentioned source of error, M. Pasteur had found that bacteria were no longer produced.

July 30. *Congenital Ectopia of the Heart*.—M. François Franck communicated the results of a comparison which he had made between the cardiographic tracings obtained in the case of congenital ectopia of the heart which he had described, and those obtained by MM. Chauveau and Marey from the horse. These tracings were identical. He had also found out the synchronism of the pulsations of the two ventricles, that of the left ventricle being the more intense.

*Poisonous Blood*.—M. Paul Bert presented a note on blood, of which the virulence resists the action of compressed action and of alcohol. He at first thought that the toxic element surviving the bacteria was not a living being, but since the experiments of MM. Pasteur and Joubert he has found that it is an affair of corpuscles, bacteria germs; these corpuscles, in fact, have the power of surviving when the adult bacteria infallibly succumb to the action of oxygen or alcohol.

*The Mechanism of Deglutition*.—M. G. Carlet read a note on the mechanism of deglutition. In a former paper he announced three new results: 1. Lowering of the pressure at the bottom of the buccal cavity, before the ascent of the larynx; 2. Raising of the arch of the palate, and aspiration of the food ball; 3. Partial occlusion of the isthmus of the fauces, to prevent the return of the food into the buccal cavity. The first result having been established by M. Arloing, the writer showed that the uprising of the palatine vault always precedes the sudden ascent of the larynx; the interval which separates these two phenomena may be very brief, but nevertheless constantly exists.

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## REVIEWS.

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*Cyclopædia of the Practice of Medicine*. By Dr. H. von ZIEGLER. Volume vii, Diseases of Chylopoietic System, etc. London: Sampson Low and Co., 1877.

The seventh volume of this great work comprises Diseases of the Chylopoietic System, together

with Diseases of the Naso-pharyngeal Cavity and Pharynx, and certain affections of the Larynx. Like its predecessors, it contains a very large amount of valuable matter, and therefore will not only be read with profit, but should take its place on the book-shelf as a work for frequent reference. But, as must necessarily happen in the case of books written by various authors, the articles in it are of very different degrees of merit, the arrangement of subjects is not always judicious, and there is a frequent tendency to repetition, to inordinate expansion, and to the introduction of incongruous or at any rate needless discussions.

The first section of the work, by the late Professor Hermann Wendt, on the diseases of the Naso-pharyngeal Cavity and Pharynx, has undoubtedly been written by a consummate master of his subject, and furnishes an excellent account of the anatomy of these parts, of the lesions to which they are liable, of the symptoms which attend these lesions, and of their treatment. But it is nevertheless a remarkable example of some of the defects above referred to. No fewer than 106 pages are devoted to the diseases of a region extending from the basilar process above to the cricoid cartilage below, from the vertebræ behind to the posterior nares and posterior pillars of the fauces in front, and bounded laterally by the walls of the gullet. Of course it will be admitted that within this limited space nearly all forms of pathological phenomena may be observed, just as they may, for example, within a square inch of skin taken at random, and that hence a minute description of them might easily be extended, not merely to one, but to two or three hundred pages. But it would, to say the least, be wearisome and monotonous if, after having exhaustively discussed skin-diseases as they may affect one square inch of surface, we should proceed to an equally exhaustive account of the affections of every other similar area. It is scarcely less wearisome and monotonous to have to peruse entirely independent descriptions of the diseases of the naso-pharyngeal cavity and pharynx, of those of the nasal fossæ, and of those of the fauces, parts so intimately associated that with few exceptions diseases involving one involve the other at the same time. Besides this, while (to take ordinary catarrh as an example) we have in different parts of the work so much of its pathology, symptoms, and treatment, as belongs to certain numbers of square inches of surface, we really obtain no true and useful picture of the disease as a whole, as it exists in nature, and as we meet with it every day of our lives. So far the error, if error it be, is probably referable to the editorial plan of arrangement. But it loses nothing in the hands of the author, who divides his account of catarrh of one already restricted region into the following varieties, namely—acute retro-nasal catarrh, chronic retronasal catarrh, acute catarrh of the lower pharynx, chronic catarrh of the lower pharynx, hyperplastic catarrh, and rarefying dry catarrh, and gives under each of these heads a separate account of the pathological changes, symptoms, and treatment. We repeat, however, that the article is a valuable one. It contains many important facts and hints for treatment, and will certainly repay careful perusal.

The section devoted to Diseases of the Stomach and Intestines, by Professor W. O. Leube, appears to be very well done. It seems to us, however, in many parts at any rate, to have less the characteristics of a practical and well-balanced essay than those of a prize thesis, in which the author has allowed himself to give un-

due prominence to points which are new or curious, and to introduce collateral matters for the sake of merely displaying knowledge. The treatment proposed is generally judicious, but we suspect that English physicians will be long before they sanction the habitual use of the stomach-pump in gastric catarrh, gastric ulcer, dyspepsia, and allied conditions, for the purpose of removing the contents of the stomach and washing the organ out. The author's contemptuous reference to bismuth in the treatment of stomach-affections must surely arise from want of experience of its use.

The portion of the work by Dr. O. Leichtenstern on Constrictions, Occlusions, and Displacements of the Intestines is very voluminous, learned, and abounding with information, but it is extremely difficult and unpleasant reading, partly from its style, partly from the author's practice of interrupting the continuity of his descriptions by notes interpolated in the text, and by passages almost of the nature of notes printed in small type. The reader carries away no picture whatever of the diseases about which he has been reading. We suspect, too, that the author has not been happy in his translator.

The subject of Intestinal Parasites, by Professor A. Heller, is full and complete. Not the least interesting part of the paper is the series of statistical tables of the frequency with which round worms are found *post mortem* in the intestines at Erlangen, Dresden, and Kiel; from which it would appear that the ascaris lumbricoides and the trichocephalus dispar are of much more frequent occurrence in these places than in England, and that the special *habitat* of the thread-worm is not the rectum, as we have generally been taught, but the cæcum. The author argues from the latter fact that the treatment of threadworms by injections into the rectum, as ordinarily practised, can be of only temporary benefit; and that in order to work an effectual cure it is necessary to employ purgatives, and at the same time to wash out the large intestine in its whole length. We are disposed, however, to regard the influence of purgatives in expelling intestinal parasites as much less powerful than Heller assumes it to be, and to believe that the use of parasiticide injections into the rectum is often of permanent efficacy in the cure of threadworms. The directions given for the treatment of tape-worm are exceedingly elaborate. It is recommended that for two days the patient should be subjected to preparatory treatment, having for its object to empty the bowels as much as possible, and insure that such fecal matter as they contain shall not obscure the worm or injure it mechanically; that towards the end of this period measures should be adopted to make the presumed healthy worm an invalid, for which purpose a meal of red herrings and garlic is suggested; that then the special parasiticide treatment should be pushed; and that after its due action a meal of some mucilaginous soup should be administered to soothe the ill-used digestive tract, and a sermon on the etiology and prophylaxis of tape-worm be delivered to improve the patient's mind. We fancy that most physicians are satisfied with a much less elaborate procedure, and that their results will be found to be equally satisfactory. In describing the cysticercus cellulosæ, the author makes a slight anatomical slip. He says that as it lies within its vesicle or cyst the head of the cysticercus is turned inside out like the finger of a glove. But in fact it is the neck only which is thus inverted. No such inversion of the head or of that part to

which the hooklets and suckers are attached takes place.

Diseases of the Larynx are described by Von Ziemssen himself; and in our opinion his essay is the best part of the volume. The accounts of the several diseases are full and graphic, and obviously the work of a man who knows his subject fully, and who at the same time knows how to handle his materials. We would especially draw attention to his description of lupus of the larynx, an affection of very rare occurrence, and one with which general physicians are perhaps wholly unacquainted; and to his discussion of the neuroses of the larynx, which is singularly clear and instructive. The very rare affection, bilateral paralysis of the crico-arytenoidei postici muscles, is treated of at considerable length. Nine cases, quoted from various authors, are given in full detail. The striking characteristics of the disease, and its almost invariably fatal course, are forcibly depicted. As to its pathology the author arrives at no definite conclusion.

The last article is that on Spasm of the Glottis, by Dr. A. Steffen. It is learned, practical, and instructive, and altogether a very valuable contribution.

We may conclude our notice of the volume by remarking on one or two peculiarities which have struck us during its perusal. In the first place, we question if the contributors are generally so thoroughly imbued with English views as their frequent references to British authors might lead one to suppose; at any rate, it is curious to observe how in some cases modes of treatment which have long prevailed in this country are spoken of as something new, and seem credited to German physicians or German instincts. In the second place, no one can peruse the volume without observing that among German physicians the study of mineral waters has become a science, and their employment an art, we might almost say a fine art. Is this to be regarded as a proof of intellectual progress or of retrogression? No doubt opinions will differ upon this point. In the third place, while admitting that the translation is on the whole ably done, we must take exception to many words and phrases which are often employed in the book, not all of which probably are due to the translators. Why should cadaver be used in place of corpse or dead body? Why feculent (starchy) in place of fecal? Why traumatism in place of wound? Why roasted-rare instead of under-done? Why distomum or anchylostomum rather than distoma and anchylostoma?

J. S. BRISTOWE, M.D.

*Clinical Lectures on Diseases of the Liver, Jaundice, and Abdominal Dropsy, including the Croonian Lectures on Functional Disarrangement of the Liver, delivered at the Royal College of Physicians in 1874.* By CHARLES MURCHISON, M.D., LL.D., F.R.S., Fellow of the Royal College of Physicians; Physician and Lecturer on the Principles and Practice of Medicine at St. Thomas's Hospital, &c. Second Edition. Pp. 644. London: Longmans, Green, and Co., 1877.

Dr. Murchison's *Clinical Lectures on Diseases of the Liver* were published in the form of a volume in 1868. Since that time the work has become well known, and wherever known it has been valued. We heartily welcome the new edition of this work. Having been out of print for over five years, this clinical treatise will come as a new book to many of our students and



younger practitioners. We commend the general style and composition of the work, as well adapted to assist and encourage clinical research; and as a good specimen of what clinical teaching should be—clear, forcible, and logical.

The cases upon which remarks are founded have been carefully observed and accurately recorded, and each case is used to illustrate or prove some point in the natural history or treatment of the disease under consideration. In his comments upon the cases narrated, Dr. Murchison has the happy faculty of exemplifying, in a few words, the most important features of a case, and never expresses an opinion without assigning his reasons. Points in differential diagnosis are well put forward; and mistakes that have occurred in practice are not kept back. In his recommendations as to treatment, this author is not so sceptical as to the value of medication as are many physicians of the present day. The treatment followed is always given, and the notes of the case indicate that the results of treatment have been carefully looked for and recorded in medical study.

Glancing at the various chapters, we pass over the earlier ones, in which the commoner forms of enlargement of the liver are described.

On the subject of Hydatid of the Liver, treatment by tapping with a fine trocar is advised in all cases where the cyst is increasing in size. In a large number of cases operative interference has resulted in complete success; the abstraction of a small quantity of fluid kills the parent and secondary hydatids, and causes the cyst to shrivel up in many instances. In withdrawing the cannula, a necessary precaution is to press the abdominal walls gently backward against the liver, and also to pass the finger on the end of the tube, so as to prevent fluid from falling into the peritoneal cavity; the puncture in the cyst-wall is then closed by its own elasticity. This method is now fully established as a legitimate and useful proceeding.

In the consideration of the differential diagnosis of Cancer from other forms of enlargement of the liver, it is remarked that a large majority of cases of cancer of the liver are secondary to cancer in other organs, especially such as are connected with the portal circulation. With cancer the temperature is usually about the normal standard, or slightly below it, unless there be some inflammatory complication. As characters distinguishing cancer from multilocular hydatid tumour, it is pointed out that each may present a hard nodulated tumour, intense and persistent jaundice, œdema of the legs, and rapidly increasing emaciation with prostration. Vomiting, however, which is a common symptom with cancer, has been but rarely observed in cases of multilocular hydatid tumour. Again, with multilocular hydatid tumour there is almost always considerable enlargement of the spleen, while out of ninety-one cases of cancer of the liver, recorded by Frerichs, this sign was observed in only twelve. Hydatid may, of course, last for many years, while cases of cancer quickly terminate. Such points as the family history, the presence of circumstances likely to cause waxy disease, etc., must of course be taken into consideration in making a differential diagnosis.

We would draw especial attention to a new chapter added to the present edition, on some of the rarer Enlargements of the Liver. A case of spindle-celled sarcoma of the liver is narrated at length, and the pathological and microscopical conditions found after death are illustrated by wood-cuts. Myxoma, epithelioma, and cysto-sarcoma of the liver are also re-

ferred to and described. An interesting case is recorded of simple cysts in the liver, which suppurated; one ruptured into the peritoneum and set up acute peritonitis. After death, no trace of hydatid membrane could be found in any of the cysts. A well-marked case of enlargement of the liver, with xanthelasma, is also included in this chapter. On microscopical examination, a large portion of the liver was found to consist of nucleus and fibroid tissue in the portal canals and between the lobules.

Three chapters are devoted to the consideration of Jaundice; and the student will find here very useful tables of the causes of the various forms of this condition. Various theories have been advanced as to the pathological causes of jaundice. It is commonly acknowledged that, when any obstruction exists to the flow of bile into the duodenum, jaundice results from absorption of bile into the blood by the lymphatics and veins; the case is, however, not so clear where there is no obstruction, as in black atrophy of the liver and pyæmia.

Dr. Harley, in his essay on jaundice, adopted the view that the liver manufactures the bile-acids, while it merely excretes the bile-pigment from the blood; thus suspended secretion would lead to the retention and accumulation of bile-pigment in the blood, and the appearance of jaundice. Dr. Murchison, on the other hand, maintains that both bile-pigment and biliary acids are formed and excreted by the liver. Extirpation of the liver has not been followed by the appearance of either biliary acids or pigment in the blood, the urine, or the muscular tissue, in animals experimented upon.

Jaundice, with the continued appearance of bile in the motions, is usually due to a specific poison such as that of yellow fever, relapsing fever, or typhus, and is often followed by cerebral symptoms, and a prostrate condition passing on to the "typhoid state". These symptoms appear attributable, not to the presence of bile in the blood, for they are often most severe when the jaundice is slight or absent, but rather to the arrest of that function of the liver which causes disintegration of the waste-products of the tissues; urea is no longer eliminated, lithic acid and other deleterious products of disintegrated albumen, such as leucin and tyrosin, accumulate in the blood; and to this poisonous action may be attributed the symptoms of the typhoid state.

The Croonian lectures of 1874, on "Functional Disarrangement of the Liver", are included in the volume under consideration, and add much to the value of the present edition. The character of this work is, in most of its chapters, strictly clinical; the discussion of minute pathological details does not come within its scope, but references are fully given to other works, which deal with the same diseases from a pathological point of view. In the present edition, the wood-cuts have been increased from twenty-five to thirty-seven in number; most of the additions are included in the chapter on the rarer enlargements of the liver, and several illustrate the Croonian lectures.

FRANCIS WARNER, M.D.

*The Question of Rest for Women during Menstruation.* By MARY PUTNAM-JACOBI, M.D., Professor of Materia Medica in the Women's College, New York. Pp. 232. Smith, Elder, and Co. 1877.

This is a very important essay. It is written about women by a woman of well-known competence, and has gained the Boylston Prize of Harvard University

for 1876. It opens up a very grave question, and one which seems to be assuming a more serious aspect as time goes on. The gradual development of the nervous system is increasing the gravity of many subjects, and especially affects the female sex. And it seems highly probable that the disorders to which women are subject by virtue of their sex are becoming increased and aggravated by this nervous development. At least, such is the conclusion as drawn from Dr. Mary Putnam-Jacobi's book.

It is not necessary to go into the physiology of this cyclical phenomenon under consideration at any length here. Suffice it to say, that the author discards the old view that the catamenial period is something special in its demands during the time it lasts. She upholds the newer view that there is a gradual and steady preparation for the menstrual flux going on during the intermenstrual period. There is a constantly rising wave of nutrition affecting the nervous and muscular systems, which culminates in and is relieved by the flux, and then gathers again. "The blood of the woman, non-pregnant as well as pregnant, maintains constant provision for the nutrition of offspring, just as the sap of the tree contains constant provision for the nutrition of buds. When, in virtue of the rhythmic movement inherent in their form of nutrition, a portion of the nutritive fluids of women becomes in excess of their individual needs, the excess begins to accumulate in the circulation, until, finally, the tension becoming excessive, the closed system gives way at its weakest point, the vessels of the fatty degenerated uterine decidua, and hæmorrhage follows." If the uterine membrane be not the weakest point, then the hæmorrhage shows itself at the point of least resistance, not rarely the lungs, and then we get "vicarious menstruation", as it is termed. "Reproduction in the human female is not intermittent but incessant, not periodical but rhythmic, not dependent on the volitions of animal life, but as involuntary and inevitable as are all the phenomena of nutritive life." She asserts that "in the majority of women the week preceding menstruation is a period of increased vigour and consciousness of increased nervo-muscular strength", and that with many "the increased feeling of energy begun in the premenstrual week is extended throughout the menstrual flow".

It is unnecessary here to go into the evidence which the writer adduces in proof of this statement. We may more profitably pursue her remarks on the practical bearing of the question.

As regards physical labour for women, she writes: "At no time and in no country have domestic occupations absorbed the existence of the woman in the working classes; that this ideal society, where the man might suffice for the necessities of the family, and the woman only be obliged to look after the house and the education of the children, has never existed in the past; that whenever a branch of remunerative employment has been open to women they have precipitated themselves upon it with avidity, and that in the absence of industrial pursuits they have fallen back upon occupations coarser and less productive." And again, "It is well known that muscular exercise increases muscular nutrition. It increases the sum of nutritive material stored up in the muscles, ready at any moment to be appropriated either for the evolution of motor force in muscular contractions, or for the development of the supplemental wave of nutrition, destined to terminate after one month in menstruating, or after nine months in parturition". She then refers to the female por-

ters of Boulogne as examples of feminine robustness. She might also have instanced the magnificent *physique* of the Roman women during the empire, and the effect their exercises and their hygienic arrangements had in the maintenance of their superb bodies, even when the decay of the Empire was telling on everything around them, the *physique* of the men included. Contrasting the muscular frames of European women with her own countrywomen, she says: "In this country, the cardinal weakness left in the basis of society is the absence of peasantry and peasant blood—weakness only to be compensated by a strenuous cultivation, to which our country people have not attained. Little work is here (America) attempted that is beyond woman's strength, while very much is declined that is within its compass. The defects in the industrial or other work occupying our women lie not in the degree of force required for its accomplishment, but in the prolonged sessions during which the force must be exerted, or in the constrained positions it necessitates. Whatever posture interferes with the free return of venous blood, especially from the pelvis, is injurious to a woman." When a constrained position is combined with "nervous strain" then the health of woman is quickly affected, and often seriously impaired. It is the "forced fixity of attention" which is so destructive to women as compared to men. She says: "Now it is very noticeable in women that, as their characteristic bodily deficiency is lack of muscular strength, so their characteristic mental deficiency, taken as a class, should be lack of power of sustained attention. The very highest degrees of sustained attention have rarely been attempted by women, while the lower degrees, necessitated by the exigencies of every-day life, are frequently followed by a collapse of nervous energy that seems perfectly unaccountable when we consider only the amount of work accomplished. Simple continuous work, which is either indifferent or repellent, will, if pursued for a long time, be followed by a 'breaking down of the health' in women much more than in men. 'Very hard work, that thoroughly excites the sympathies, may be accomplished with ease.'"

The notorious facts of the effects of teaching upon the health of women, and especially the disturbance of the reproductive organs from which female teachers suffer so commonly, are in harmony with Dr. Putnam-Jacobi's views. She thinks "that the initial circumstance of the 'breaking down' consists in an encroachment upon the individual nutrition of the supplemental wave of reproductive nutrition, which we have held to be peculiar to the female economy".

"The practical inference to be drawn from these considerations, in regard to the adjustment of female work to the reproductive necessities of her economy is that this should be constantly intermittent, *not at long intervals but at short*. Since the menstrual flow does not itself constitute the reproductive demand made upon the individual nutrition, but only expresses the result of that demand; since the latter is made constantly, and only its effects accumulate in a rising curve; nothing would be gained but much lost by a single intermittence of work during the few days of the menstrual hæmorrhage, the strenuousness of the rest of the month being left unchanged. The kind of rest needed by women consists in interruption to employment every two or three hours, not every three or four weeks." To illustrate this the writer alludes to domestic servants, and compares their health with that of women who have to do



eight hours steady unbroken work in higher employments.

The social perversions which interfere with these processes peculiar to women and deteriorate their health, so that these distinct rhythmic periods become painful and affect the general health, she sums up as follows. "Bad physical education during childhood and adolescence; absence of employment, or work which is either absolutely excessive, or excessive relative to woman's constitution, by being prolonged too much during a single session, or else which is insufficiently relieved by recreation, or insufficiently spurred by interest; unduly prolonged celibacy, and unequal distribution of reproduction, on account of which many women are broken down by excessive childbearing, while many others never obtain the opportunity to bear a single child, for which, nevertheless, every fibre of their physical and moral being is yearning."

Space will not permit further extracts. As to what is the real condition of women generally, as to ideally healthy women, and what their needs, the final sentence of this essay tells a great deal. "It remains true, however, that in our existing social conditions, 46 per cent. of women suffer more or less at menstruation, and for a large number of these, when engaged in industrial pursuits or others under the command of an employer, humanity dictates that rest from work during the period of pain be afforded whenever practicable."

Dr. Mary Putnam-Jacobi does not consider the question how far her peculiarities will affect woman in the intellectual life to which many now aspire. Doubtless she will take up this subject in some future essay. The present essay is full of material for thought. It is excellently written, as the above extracts show, and it reflects the greatest credit upon its author in every way.

J. MILNER FOTHERGILL, M.D.

*Transactions of the American Gynecological Society.*  
Vol. I. Boston: H. O. Houghton and Co. 1876.

THE American Gynecological Society, of which this is the first volume of transactions, was founded at the Academy of Medicine, New York, on June 3rd, 1876. The founders of the Society had in view certain definite objects; in the first place the promotion of science in all that relates to obstetrics and the diseases of women; secondly, the establishment of a *corps d'élite* composed solely of American gynecologists of known repute, reinforced by a small contingent of foreign honorary members; lastly, the publication in each volume of transactions of a complete bibliography of everything that appears pertaining to obstetrics and gynecology during the current year, not only in English but in foreign literature. That the first two objects have been achieved, the papers in the present volume, and the list containing the names of Peaslee, Fordyce Barker, Atlee, Trask, Thomas, Emmet, and Byford as fellows, and those of Robert Barnes, Spencer Wells, Thomas Keith, and McClintock as honorary fellows, sufficiently testify. The third object, the publication of an annual obstetrical bibliography will doubtless be successfully carried out in future volumes. The list of honorary fellows has evidently been chosen with great care and judgment, yet not one of the classic names of Pajot, Depaul, Bernutz, Bailly, or Courty, adorns the roll. Obstetric medicine has always held a high position and received great

attention in America; it is not surprising, therefore, that such a Society as this, destined to encourage the study and raise the prestige of obstetric medicine, has been inaugurated there under such good auspices.

The first annual meeting of the Society was held in the Academy of Medicine, New York, September 1876, under the presidency of Dr. Fordyce Barker, when the following papers were read: "On the Etiology of Uterine Flexions", by T. A. Emmet, of New York; "Cicatrices of the Cervix Uteri and Vagina", by A. J. C. Skene, of Brooklyn; "Extirpation of the Functionally Active Ovaries for the Remedy of otherwise Incurable Diseases", by R. Battey, of Rome; "On Central Rupture of the Perinæum", by J. Matthews Duncan, of Edinburgh; "Viburnum Prunifolium; its Uses in the Treatment of Diseases of Women", by E. W. Jenks, of Detroit; "An Illustration of Xanomenia", by T. Parvin, of Indianapolis; "On the Importance of the Uterine Ebb as a Factor in Pelvic Surgery", by H. R. Storer, of Boston; "On the Relations of Pregnancy to General Pathology", by Robert Barnes, of London; "The Spontaneous and Artificial Destruction and Expulsion of Fibrous Tumours of the Uterus", by W. H. Byford, of Chicago; "A Case of Abdominal Pregnancy treated by Laparotomy", by T. G. Thomas, of New York; "Pneumatic Self-replacement in Dislocations of the Gravid and Non-gravid Uterus", by H. F. Campbell, of Augusta; "Hydrate of Chloral in Obstetric Practice", by W. L. Richardson, of Boston; "Labour Complicated with Uterine Fibroids and Placenta Prævia", by J. R. Chadwick, of Boston; "Latent Gonorrhœa with regard to its Influence on Fertility in Women", by E. Noeggerath, of New York; "On Death from Urinæmia in certain cases of Malignant Disease of the Uterus", by A. Wiltshire, of London; "Cases of Cystic Tumours of the Abdomen and Pelvis", by G. H. Bixby, of Boston; "A Case of Solid Uterus Bipartitus", by E. R. Peaslee, of New York; "Clinical Memoir on some of the Genital Lesions of Childbirth", by W. Goodell, of Philadelphia; "The Origin and History of Calculi formed in the Bladder after the Cure of Vesico-vaginal Fistula by Operation", by H. F. Campbell, of Augusta; "Rare Forms of Umbilical Hernia in the Fœtus", by J. R. Chadwick, of Boston.

A glance at the above list of papers reveals the fact that this is an excellent volume of transactions, both as regards the extensive range and variety of the subjects treated of, and also as regards those by whom they are dealt with. To discuss in detail the merits, and, if any, the demerits, of such a collection of papers would demand more space than we have at our command. We shall therefore content ourselves with making a few remarks upon some points which have more particularly arrested our attention in the perusal of this volume.

The question of Extirpating functionally active Ovaries as a cure for excessive menstrual molimen accompanied by epileptiform convulsions, raised by Dr. Battey, calls for serious consideration while it is yet *in limine* as an acknowledged operation. The author relates nine cases, in seven of which both ovaries, in the two remaining cases only one ovary was extirpated. Death resulted in two cases. The cases which Dr. Battey regards as specially adapted for this operation are those in which any grave disease which is either dangerous to life or destructive of health and happiness is incurable by any other and less radical means, and which we may reason-

ably expect to remove by the arrest of ovulation or change of life. Where one ovary only has seemed at fault, Dr. Battey has confined himself to its removal, leaving the other behind. Whether or not this operation can be justified, we would leave to the judgment of the profession; logically it commends itself to us equally with ovariectomy in the ordinary sense of the word. We have recently seen a case in which the act of ovulation is sometimes accompanied by such violent convulsions as to render death imminent; we cannot help thinking that in such a case the operation might possibly be justifiable.

In the paper on the Relations of Pregnancy to General Pathology, Dr. Barnes points out the rapid transition from physiology to pathology and back again as exemplified in the changes in the blood, urine, and other secretions, the pigmentation, the increased vascular tension, the various nervous phenomena, as convulsions and insanity, in the pregnant state. As regards the study of arterial tension, the author remarks that he can call to mind hardly any other physiological or pathological state in which the phenomena of arterial tension can be studied with so much precision or instruction as in pregnancy.

Dr. Alfred Wiltshire draws attention to Urinæmia as a cause of death in certain cases of Malignant Disease of the Uterus. He has seen symptoms of urinæmia suddenly supervene, quickly followed by a fatal ending. He records an interesting case in point, in which at the necropsy no dilatation of the ureters was observed. This absence of dilatation of the ureters must be uncommon.

Dr. Thomas's case of successful Laparotomy in Abdominal Pregnancy is in all essential respects similar to the case reported last winter at the Obstetrical Society of London by Mr. Jessop, of Leeds. The two cases form a valuable addition to the literature of the subject.

In discussing the prophylactic measures to be adopted in cases of Labour complicated with Fibroids and Placenta Prævia, Dr. Chadwick—arguing from a rupture of the vagina which caused death in a case of his own, and from a similar accident in a case of Dr. Wiltshire's—concludes that the induction of abortion or premature labour would probably be attended with less risk than any other course. He would not perform Cæsarean section unless the obstructing tumour almost filled the pelvis. As forming a guide for action in similar cases, Dr. Chadwick's case and comments thereon are most useful and suggestive.

The paper by Dr. Emmet on the Etiology of Uterine Flexures, with the proper mode of treatment indicated, is a most exhaustive *resumé* of the accepted and unaccepted views of gynecologists generally, and is an evidence of much labour and conscientious investigation of the subject by one who is thoroughly capable of performing such a task.

The remaining papers reflect equal credit, both as literary and scientific products, upon the American school of gynecologists, and will well repay perusal. We are glad to be able to congratulate the publishers on the handsome and artistic appearance of the book, which is rendered still more pleasant to read by the clearness and excellence of the old-face type in which it is printed.

FANCOURT BARNES, M.B.

*Gout, its Cause, Nature, and Treatment.* By JOHN PARKIN, F.R.C.P.E., F.R.C.S. London: Hardwicke and Bogue. 1877.

THIS small book on a great subject is a second edition, the work having first appeared in 1841. Its aim is both destruction and construction; the object of the former being to demolish Dr. Garrod's explanation of gout; while the essence of the latter is the reference of the malady to malaria for its cause and carbonic acid for its cure.

The author's train of reasoning to prove the malarious origin of gout may be summed up as follows. As gout is not due to such causes as have been alleged by other writers, for instance, uric acid, intestinal inflammation, and plethora, it must be due (and this is likely *à priori*) to a morbid matter in the blood. Now this morbid matter, our author gravely argues against the ancients, is not bile, phlegm, or blood propelled into vessels which do not contain it at other times, nor is it a product of imperfect digestion, nor generated in the stomach, nor due to infection. What is it then? A Japanese notion that it is of a "gazeous" nature, combined with the fact that "*Pradier's cataplasm*" produces a fœtor from the inflamed part, with subsequent improvement of symptoms, establishes the fact of a connection between gout and a "gazeous" matter. But this does not explain its origin. The source of the matter is probably extraneous to the body, and as malaria is, in the author's opinion, the cause of an enormous number of diseases in England as well as other countries, the different natures of which diseases depend on locality and temperature, *it is as probable that the poison of gout is malaria as any other.* This inference is strengthened by the similarity of certain forms of gout and some forms of malarious fever; and lastly, says our author, "that the cause of nearly all forms of fever and of gout is the same, may be inferred from the circumstance that a mixture of febrile and gouty symptoms has sometimes been observed, even in warm climates."

Surely a theorist of this order takes inferential strides too vast, and jumps too daring, to challenge much serious attention in a day like this, when the closest and most critical observation of phenomena is required to precede all other logical processes. A considerable amount of ingenuity, however, cannot be denied to the author, which is shown further in the chapter on the Physiology of Gout, in which it is argued that the morbid phenomena of an attack of gout are compatible with the theory of a specific poison in the blood.

Coming to the treatment of this disease, Mr. Parkin alleges that carbonic acid is its specific cure, and he proves its specificity thus. Carbonic acid is a cure for gout. It cannot act by expelling the morbid matter from the system, for it is not an evacuant; it is not a tonic, therefore it cannot be referred in its action to any general principle; so it must act specifically, *i.e.*, as an antidote. But the evidence he brings for the starting-point of this chain of peculiar reasoning is unfortunately as scanty as its importance is enormous, for clearly it can only rest on a vast series of cases well observed by those thoroughly capable of eliminating fallacies. A disastrous fire, however, at the Pantheon destroyed nearly all the author's notes, and we are reduced to a few letters to Mr. Parkin from grateful patients and doctors for the basis of our own judgment on the matter. This much, however, may be said, that the trial of the remedy, consisting of frequently drinking



soda-water or small effervescing draughts, may safely be made, even for the off-chance of success. Whether our readers are allured by the malaria theory or not, they fairly may test this treatment when face to face with those cases of obstinate gout which we are often powerless even in any degree to control.

The criticism intended to be destructive of Dr. Garrod's hypothesis alone deserves some special notice as giving an example of the author's method of controversy, and evincing a tendency to prove his opponent in the wrong at all hazards. How much credit can be given to Mr. Parkin for even a moderately careful study of the standard work he so ridicules, when he repeatedly represents Dr. Garrod as saying that uric acid exists *as such* in the blood of gouty patients? For instance, he attempts to render absurd the administration of lithia, by the striking allegation that on Garrod's own showing uric acid already exists in the blood as such and therefore in its most soluble form, this treatment is being directed "to effect that which has already been effected, and is therefore not only superfluous but ridiculous." This may be but blundering, but it stamps the brochure with carelessness at least, which, added to its other shortcomings, does not promise for it a wide career of usefulness.

HORATIO DONKIN, M.B., Oxon.

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## MISCELLANY.

A NEW burner for obtaining high temperature in laboratories has recently been described by M. Godefroy. It consists of four metallic cylinders, one within another; the first and the third are pierced with lateral holes at their base. The intervals between the cylinders communicate one set with two vertical pipes, uniting in a horizontal pipe below, the other set with another similar system. A piece of metallic net at the lower part regulates the entrance of air.

ARTISTS AND MUSCLES.—Dr. Garrod, the Fullerian Professor of Physiology, in lecturing at the Royal Institution on "The Human Form; its Structure in Relation to its Contour", drew attention to the way in which artists frequently exaggerate muscles. When a muscle is in action it thickens as it shortens, and to represent a thickened muscle implies motion. A beautiful effect of motion, as in the Greek statue of Mercury, can thus be given. But too often artists, instead of depicting that amount of change in contour which actually exists, draw on their imagination, and, if they have studied anatomy, give what theoretically they think ought to exist. It is almost better for artists not to learn anatomy, or, if they do, they should subordinate their knowledge to the facts they can actually observe. The Greeks knew nothing of the contraction of muscle, they even imagined that muscles only served to keep the bones covered and warm; yet by careful observation their artists learnt truthfully to seize on the contour that different parts of the body assume in different attitudes and actions. Most of Michael Angelo's figures, while they are beautiful works of art, represent such sets of muscles as rarely, if at all, are actually met with. Artists, especially younger ones, are also very apt to fall into another error—that of not paying attention to the position of centre of gravity of the body.

OBSTETRICS AND GYNÆCOLOGY ONE HUNDRED YEARS AGO.—In the *Obstetrical Journal of Great Britain and Ireland*, Dec. 1876, Professor Simpson points out how very crude was knowledge of the physiology of reproduction and of the anatomy of the female pelvic organs 100 years ago. He gives as one illustration of the diagnostic traits in which practitioners of those days found themselves, the following fact. In cases of retained placenta and of miscarriage, when a substance was expelled from the womb regarding which they were in doubt whether it were a blood-clot or placenta, the only means of making the distinction was to soak the specimen in question in water. If it dissolved, it was a coagulum; if it retained its fleshy consistence, it was placental tissue. A single sentence contains all Dr. Young's student carried away with him, under the definite head of "Diseases of the Uterus." "The uterus is subject to all other disorders as the other fleshy parts, such as inflammation, cancer, scirrhus, &c., and these diseases in the uterus have nothing particular, except that

some of them, as the scirrhus cancer, are here more difficult to discover than in any other part."

ACCORDING to M. Perrin, an eighth or a tenth portion of the French army is incapable of doing good service, in consequence of indistinct vision. M. Perrin formally proposes to remedy this by the adoption of spectacles. It is affirmed that spectacles are useful, if not indispensable, to 47 of the officers coming from the École Polytechnique.

ANTI-TOBACCO SOCIETY.—The Paris Society Against the Abuse of Tobacco have proposed the following prizes: 1. A prize of 100 francs (£4) for the best essay addressed to the young against the dangers of a premature use of tobacco. The length of the essay not to exceed 15 pages in octavo. 2. A prize of 200 francs (£8) to a physician who can write the greatest number of interesting and unpublished remarks on diseases caused by tobacco. A prize of 300 francs (£12) for the best essay on the influence of tobacco upon the students in public and private schools, civil, military, etc. A medal of honour will be awarded also to each competitor.

ATTAR OF ROSES.—Some interesting particulars of the "rose harvest" are given by Col. James Baker in his new work on Turkey, the attar of rose being a product of Turkish industry. At a house where the colonel was on a visit, his host opened a cupboard which contained thirty large glass bottles of the attar, and told him that he was looking at £1,200 worth of oil. The yield of attar varies greatly. On an average, it takes 4,000lb. of rose blossoms to yield 1lb. weight of oil. An English acre of ground, it may be stated, produces from 4,000lb. to 6,000lb. of blossoms in fair years, and 34½lb. of blossoms produce about 1½ drachms of oil, for which a sum of 4s. may be obtained, Asto price, the best quality of attar varies from 17 to 18 pias-tres the miscal, or from 15s. 4d. to 16s. 10d. per ounce. The rose harvest commences in May, and lasts for about twenty days. "The farmer counts the buds on his plants, and calculates the number that will probably blossom daily, which he makes a divisor for the whole, and thus computes the number of days his harvest will last. The blossoms require to be picked with great rapidity, as the flowers must be gathered before the morning dew is off them, and then be at once distilled." The plants are easily killed by very severe frost. In 1870 the rose-trees of a whole district were destroyed, being killed in this way.

FEELING THE PULSE BY TELEGRAPH.—Some months ago Dr. Upham, of Salem, Mass., in order to explain to his audience the variations of pulse in certain diseases, caused the lecture-room to be placed in telegraphic communication with the city hospital of Boston, distant 15 miles, and by means of special apparatus the various pulse-beats were exhibited by a vibrating ray of magnesium light upon the wall. These experiments have lately been repeated with success.

TEUTONIC TYPES.—At the meeting of the German Anthropological Society at Constance on September 24, Professor von Virchow described the results obtained by him in his researches on the colour of eyes, hair, and skin of German school-children. He examined no fewer than 2,114,153 children. In the whole of North Germany, the fair, blue-eyed type with light skin is prevalent. In Mid-Germany, the darker individuals become more numerous, and reach their maximum frequency at the south-west and south-east corners. The passages from one type to another in a geographical sense are perfectly gradual. Upper Bavaria and Alsace are the extremes, between which the fairer type reaches southwards like a wedge.

CHEMICAL NOTATION.—A great discussion has taken place during the summer, in the Paris Academy of Sciences, between the representatives of the atomic notation and the partisans of the notation by equivalents; the former school being argued for by Professor Wurtz of the École de Médecine, and the latter by the eminent chemist Henri St. Claire Deville. The equivalent school admits no hypothesis;



whereas the atomic notation is based upon a double hypothesis, viz., that bodies are formed of atoms, and that equal volumes of gases or vapours contain an equal number of molecules. St. Claire Deville and Berthelot accuse the partisans of the atomic notation of having introduced a considerable amount of indecision and awkwardness into science, to serve no purpose except that of upholding an useless hypothesis.

**EVOLUTION OF NERVES AND NERVE-SYSTEMS.**—The Friday evening Lecture at the Royal Institution on May 25, was given by G. J. Romanes, Esq., M.A., who chose for his subject, "The Evolution of Nerves and Nerve-Systems". He began by describing the structure and function of fully evolved nerve-tissue, and showed that in its essential elements of cells and fibres this tissue presented very much the same microscopical appearances wherever it is met with. The function of the cells is that of accumulating nervous energy, and, at fitting times, of discharging it into the attached nerve-fibres; while the function of the fibres is that of conducting the energy so discharged to the muscles, which contract on receiving the stimulus. Nerve-fibres will also conduct a stimulus of any other kind, such as that which is caused by pricking or electrifying any point in the length of the fibre; and, in this respect, nerve-tissue differs essentially from muscle tissue as well as from protoplasm, for while muscle and protoplasm can only conduct a stimulus by means of a visible wave of contraction, nerve-tissue does so by means of an invisible or molecular wave of stimulation. The lecturer then went on to explain Mr. Herbert Spencer's theory as to the mode in which nerve-tissue first becomes differentiated from protoplasm—viz., by waves of contraction (and with them waves of stimulation), proceeding more frequently from the more exposed parts of the specific shaped masses than they do from the less exposed parts—thereby causing a polar arrangement of the protoplasmic molecules lying in the lines of most frequent passage, and so converting these lines into tracts offering less and less resistance to the waves of stimulation as distinguished from the waves of contraction. By constant use, therefore, these tracts begin to perform the essentially nervous function of conveying impressions or stimuli to a distance *irrespective of the passage of a contractile wave*. When such a tract becomes fully established, it is distinguishable as a distinct structure (*i.e.* a nerve-fibre) by the microscope; but before it is sufficiently differentiated from the surrounding protoplasm to be distinguishable as a distinct structure, Mr. Spencer calls it "a line of discharge". Mr. Romanes devoted the rest of his lecture to showing how his recent work on the *Medusæ* or Jelly Fishes has tended to confirm this theory. Jelly Fishes are mushroom-shaped animals, in which the organ corresponding to the stalk of the mushroom is called the polypite, and that corresponding to the dome of the mushroom is called the swimming bell. Nearly the whole substance of the animal is composed of a transparent and non-contractile jelly; but the whole surface of the polypite, and the whole concave surface of the bell, are composed of an exceedingly thin layer or sheet of contractile tissue. The *Medusæ* are actively locomotive, but Mr. Romanes has shown that, on removing the entire margin of the swimming bell, immediate and total paralysis of the animal ensues. This proves that nerve-cells are present in these organisms, and that all the nerve-cells are collected in the margin of the bell. The Jelly Fishes are thus proved to possess a nervous system, and they are the lowest animals in which such a system has, as yet, been discovered. After the spontaneity of the bell has been destroyed by removing the margin, the animal continues responsive to stimulation—a contractile wave spreading in all directions from a seat of stimulation as from a centre, just as it does in the case of protoplasm and muscle. Are these contractile waves merely muscle-waves, or do they depend for their passage in an incipient network of "lines of discharge" pervading the tissue in all directions,—the invisible wave of stimulation in the incipient nerve-fibres progressively causing, as it advances, the visible wave of contraction in the muscle-fibres? To

answer this question a vast number of experiments were made. For instance, the whole bell of *Aurelia* was cut, by means of a continuous spiral section, into the form of a ribbon. It was found that if this spiral mode of section were continued sufficiently far, a point was sure to come sooner or later at which the contractile waves become blocked, and when they did so the blocking was very sudden. Therefore, notwithstanding the marvellous tolerance which the tissue showed towards section, the contractile wave sometimes passing from end to end of a spiral strip only an inch broad and more than a yard long, Mr. Romanes concluded in favour of an incipient nervous net-work, and explained the astonishing amount of section which the tissue endures without suffering loss of its physiological continuity by supposing that all the "lines of discharge" are capable, in an extraordinary high degree, of vicarious action. If any part of the contractile tissues were stimulated, the marginal nerve-cells soon afterwards set the bell in violent motion, thus proving that a wave of stimulation must have coursed through the tissue to the nerve-cells. Moreover, such waves of stimulation are quite as difficult to block by means of severe sections as are the contractile waves. The following facts tend strongly to support Mr. Spencer's theory. At whatever point in a spiral section of *Aurelia* the contractile wave in the strip becomes blocked, in most cases the blocking at that point is permanent; but in a small percentage of cases it is only temporary. Now, the latter cases cannot be explained by shock, so Mr. Romanes concluded that they can only be explained by supposing that, at the point where the well differentiated line of discharge had been cut through, the severance of which caused blocking of the wave, another line must have been present of a slightly less differentiated character; when, therefore, the contractile waves, and with them the stimulus waves perpetually break upon the area of blocking, each of the forces concerned seeks for itself the lines of least resistance, and the chief of these lines will be the semi-differentiated line which has not been divided. The unusual amount of function which this line is thus suddenly called on to perform, must, therefore, entail upon it a corresponding advance of structure; increased use will cause increased permeability, until at last the new line of passage becomes sufficiently open to draft off enough of the stimulating, or nervous, influence to carry on the contractile wave beyond the area of previous blocking. Another species of *Medusæ*, which Mr. Romanes has called *Tiaropsis indicans*, has the habit of pointing with its polypite to any seat of stimulation in the bell—thus proving that the lines of discharge must have become more differentiated than they are in *Aurelia*; nevertheless, vicarious action becomes possible to a certain extent when these are divided—the stimulus escaping from the severed to the unsevered lines, as proved by the fact that the polypite is not able to localise an injury occurring in the course of a severed line, although it continues able to perceive that injury is being applied somewhere; for the polypite now actively dodges about from one part of the bell to another, seeking in vain for the offending body. Lastly, a species of *Medusæ*, called *Sarsia tubulosa*, has its line of discharge so far differentiated as to be visible as nerve-fibres, and in this species the transmission of stimuli is more rapid, and vicarious action less promiscuous than in the other *Medusæ*. Moreover, these jelly-fishes will follow a moving beam of light, which shows co-ordination among the marginal nerve-cells.

**CORRECTION.**—By an error in the article on Cerebral Thermometry, in the LONDON MEDICAL RECORD for October, page 396, column ii, line 16 from bottom, the average temperature of the frontal region in persons in health, in Dr. Bucknill's experiments, was made 98 deg. instead of 95 deg. Also, on the same page, column i, line 37, first paragraph, the figures 35.72 deg. should be 33.72 deg.; and, in the second paragraph, 93.13 deg. should be 93.61 deg.

# The London Medical Record.

## ON SPASTIC SPINAL PARALYSIS (TABES DORSAL SPASMODIQUE, CHARCOT).\*

By Dr. WILHELM ERB, Professor at Heidelberg.

(Concluded.)

WHEN the disease has developed to some degree, one finds on investigation a very marked paresis and paralysis, which, however, differs in amount. In comparatively slight and early cases this paresis is often only very slight, scarcely noticeable when the patient is lying down, and best marked in complicated and difficult movements. It is, besides, often masked by the contemporaneous cramps and muscular spasms. In the older and graver cases a high degree of paresis, amounting to complete paralysis, is easily observed, usually of unequal intensity in different regions, complete in certain groups of muscles and the areas of certain nerves, incomplete in others. The most careful investigation reveals no trace of ataxy; and there is complete absence of the "voluntary trembling" (tremor during voluntary movements) characteristic of multiple sclerosis; from great weariness their legs may shake, but only just as this occurs in healthy people from the same cause. The extension of the paresis and paralysis proceeds usually, as we have seen, to the paraplegic form, more rarely it is hemiplegic, which, however, sooner or later also becomes paraplegic. Very rarely indeed the paralysis affects the upper extremities only. The paresis of the lower extremities induces a peculiarity of gait which we shall presently allude to. In all the cases, without exception, there are at the same time motor irritation phenomena: in the slighter cases only the previously related muscular spasm which came on after action, or still more markedly after passive movements. This peculiar condition of the muscles, which presents a certain but easily overcome opposition to attempts at extension, as if it were the slightest degree of contraction, has been so often described recently that we can dispense with an accurate description of it. It is usually most easily observed in the thigh whilst passive movements of flexion and extension of the leg are being made. Some caution must be employed in making the observation, as many patients find it difficult to avoid opposing by *active* counter movements. This spasm later on becomes actual contraction, at first only temporary, then of longer duration and greater intensity, until finally the limbs become immovable, stiff, and rod-like; this is on approaching the later stages of the disease. In the lower extremities these contractions always affect the extension, so that the leg is stretched straight out, the foot appears quite drawn up, the thighs are approximated by spasm of the adductors, and pressed against each other. In the later stages, which I have not yet observed, contractions of the flexors supervene, and cause twisting and distortion of the legs. Decided contractions in the upper extremities have not hitherto come under my notice. According to Charcot, they do occur in the later stages, and resemble those commonly observed in cerebral hemiplegia—the upper arm drawn towards the body, forearm half flexed, quite

pronated, wrist and fingers completely flexed. But occasionally another position of the contracted arm may be prescribed. Along with these there are frequently still different spontaneous muscular contractions, at first single, simple twitchings and kickings of the limbs, or stronger, cramp-like, tonic drawings up, like cramp of the calf, in the higher grades often sudden tetanic extension of the legs, which become relaxed by voluntary nervous energy or by reflex irritation. By special causes also a decided clonic tremor affects both legs synchronously, an appearance which was described by Charcot and Bétous as "trepidation épileptoïde spontanée", but which I have not yet had an opportunity of observing in my patients.

These two classes of phenomena—paresis and muscular contractions in their different grades—give the gait of the patient such a characteristic appearance that one can often say at the first glance that the patient is suffering from the disease in question. This gait, which, under the name of "Spasticher Gang", I described shortly in my *Handbuch der Rückenmarks-Krankheiten*, generally characterises the cases in which locomotion is still possible; it is as follows. The legs are dragged behind, a certain unmistakable insecurity and slight staggering are present, the feet appear to stick to the ground, and to be moved forward with great difficulty, the point of the foot catches in every hindrance or unevenness of the floor, the patients stumble and easily fall; on an even floor at each step the ball of the great toe makes a very characteristic scraping noise on the floor, the boot is sooner worn out at the toe and the outer side, in more unilateral cases the foot is pushed forwards on the floor, as one sees in hemiplegia; ordinarily a decided tendency exists to walk on tip-toes, thereby causing a gradual acceleration of pace, and an increasing tendency to fall forward. The legs are generally approximated and very stiff, the knees are slightly bent, the trunk leans slightly forward. This manner of walking was decidedly more or less well marked in ten out of thirteen cases, naturally in various degrees. In the other three cases there was no characteristic peculiarity. In one of my cases, there was another peculiarity which I have already described in an earlier paper, but which appears to be present only in the highest grades of the disease in which the irritation phenomena are very well marked—it is a hopping elevation of the whole body at each step, which occasionally amounts to repeated jogging of the body. This phenomenon is obviously caused by the occurrence of local reflex tension or spasm of the muscles of the calf. The most prominent characteristics of this gait are, after the parietic dragging of the legs, their peculiar stiffness, their approximation, the short steps, the scraping with the point of the foot, and the rising on the toes. There is no trace of the swinging, irregular, uncontrolled, and excessive movements which occur in ataxy. With advancing disease, walking becomes increasingly difficult. The patients can progress only by help of sticks or crutches, or by sliding along by help of the furniture; the legs become more and more stiff, are scarcely capable of active movements, and finally all voluntary locomotion becomes abrogated. Previous observers describe the gait of the patients on the whole in the same way. Charcot (and after him Bétous) distinguishes two sorts of gait; the first is chiefly characterised by dragging of the legs, clinging of the feet to the floor, catching of the point of the foot at every obstacle;



the second by the rising on the toes, the hopping or jogging elevation of the whole body, and the tendency to fall forwards. I consider this division not justified, and cannot recognise a practical distinction between them. I find the characteristic peculiarities of both Charcot's forms in most patients, and can recognise at best in both kinds but differences of degree in one and the same alteration of gait. Indeed, the preponderance of paresis or spasm will naturally alter the result in each case.

The third symptom of the disease, increased reflex excitability of the tendons, has always been present in all the cases which, since my discovery of it, have come under my observation, and may be certainly recognised in some measure in the accounts of the previous cases. The development and extension of this change in each case is somewhat different. The intensity appears to increase with the duration of the disease. I can only allow myself a short outline of the more important facts. In all the cases it was very markedly increased in the patellar tendon, in one so much that by sudden firm fixing of the patella externally the movements persisted clonically; in another case, percussing the tendon of the less affected leg induced twitching of the quadriceps in the other very paretic limb, thus showing the extreme irritability in the quadriceps tract. Clonic spasms by dorsiflexion of the foot were more or less present in eleven out of twelve cases examined. In the twelfth case the reflex state of the tendo Achillis was well marked, but it did not amount to clonic spasm. A similar state of the adductor tendons was found in eight out of twelve cases. In the biceps femoris, tibialis posticus and anticus, it was present in only six, and was generally slight. In the upper extremity the same symptom could generally be demonstrated, even when no paresis had occurred; most usually the triceps tendon above the olecranon was the most irritable, after it the biceps. Slight tapping on the inner side of the lower end of the radius set the biceps into reflex contraction; in the same way tapping the outer surface of the lower end of the ulna produced similar contractions in the triceps, which also extended to the posterior division of the deltoid. The supinator longus and flexores carpi and digitorum were also frequently excitable from the wrist-joint. The deltoid, moreover, could be excited from the spine of the scapula and the cervical vertebræ, the pectoralis major by percussing the sternum, etc. In all these cases there was no doubt that irritation not of the skin but of the deeper structures (tendons, fasciæ, periosteum, and ligaments) was the true source of the reflex movements. Nothnagel, and more recently Lewinski, have shown that these movements may be controlled by compressing the nerve-trunks.

Far less frequently does one find any abnormal condition of cutaneous reflex excitability. In thirteen cases it was five times normal, four times increased within the limits of health, and four times decidedly exaggerated. Certainly increase of the cutaneous reflex excitability is not one of the frequent or important phenomena of the disease. O. Berger found it frequently, but not as a rule, increased.

The sensibility of the skin was normal in thirteen out of sixteen cases. The muscular sensibility was normal in every case. In one case there was slight numbness and formication in the legs; in another there was some hyperæsthesia to pain, but quite normal sensibility; and in one other case there was dysæsthesia to forcible pressure of the limb with quite normal sensation, or at least without decided

anæsthesia. This normal condition of sensibility is testified to by the constant absence of staggering with the eyes shut in this disease. The patients walk and stand with shut eyes, as well or as badly as they do with them open. In the typical state of the malady no change of sensibility occurs; on this point all authors are agreed. It is the same for the conditions of the urinary and sexual organs; decided alterations of function were as good as absent. In two cases I found slight bladder feebleness as a temporary condition, a slight weakness of expulsive power, combined with dribbling; decided bladder mischief was never noticed. The same holds good for the sexual function, so far as it could be ascertained; in men it remained quite intact, virility was preserved, coitus was quite normal, and with normal feelings of satisfaction. Where a diminution of *libido sexualis* was complained of, it was due perhaps to the age of the patient, and was merely expressed relatively to former days. Of pollutions, spermatorrhœa and the like, there was no notice. In women, no kind of sexual abnormality was found.

Of vaso-motor changes, not much note was taken. Four times only have I noted appearances belonging to this class; cold feet, with in one case lividity of the skin. Berger has observed the same in one case. Trophic changes were absent in every case. More particularly I have never noticed changes in the skin, never bedsores, nor eruptions, nor ulcers, etc. The nutrition of the muscles remains without exception quite intact. In one case, the muscular system was quite magnificently developed; in two there was slight wasting of the paretic limbs, but never amounting to decided atrophy. We can say, therefore, that muscular atrophy does not belong to the characteristic type of this disease.

The electrical excitability of the motor nerves was in most cases tested after my exact method. No doubt the number of the cases is too small to permit a certain conclusion to be drawn, but these data may serve as a guide. Decided and obvious changes in the galvanic and faradic excitability did not exist. Moreover there was universal absence of any degree of qualitative change of galvanic excitability. On the contrary, in most of the cases slight quantitative changes of electrical excitability were noted. Eight cases were carefully examined; in two of these the faradic and galvanic excitability were normal throughout; in the other six cases there was slight diminution of faradic and galvanic excitability in the paretically affected nerves; up to the present time I have never observed abnormal increase of the electrical excitability. The diminution of electrical excitability was, as we have mentioned, not well marked as a rule; it was not equal on the two sides, nor proportional to the degree of paresis, the less paretic side many times showing it more decidedly. In one case I was able to prove a further diminution of electro-excitability as the disease progressed. The faradic excitability appears to have suffered less than the galvanic, at least the diminution of the latter was more definite and demonstrated earlier and with greater certainty. On account of the difficulty and the many fallacies of the method, all these data greatly need confirmation.

The state of the brain and the cerebral nerves was normal in every case, with one exception. Not the least affection of psychical functions, organs of special senses, oculo-motor nerves, faciales, speech, mastication, swallowing, etc., could be discovered. [The exception referred to presented some anomalies, and perhaps does not properly belong here. There were

certain bulbar phenomena which supervened after a relatively short duration of the disease, difficulty of speech and swallowing, some stiffness of the movements of the lips, as well as a sort of lachrymose condition which presents itself so frequently in the subjects of diseases of the central nervous system. By this and by the commencement of the paresis in the upper extremities, the disease approached the "Sclérose latérale amyotrophique," excellently described by Charcot, but the absence of muscular atrophy, of which no trace was ever present, distinguishes it from that.] In Charcot's observations, no head-symptoms occurred. Berger found slight disturbance of speech in one case, in another atrophy of both optic nerves, but admits the possibility that it was a case of multiple cerebro-spinal sclerosis.

In conclusion, no noteworthy change was ever found in the condition of the spinal axis.

On the further course and later stages of the disease, I can say little from my own observation. My cases have remained for years unchanged, or have made only very slow progress for the worse. Charcot and Bétous say that the disease goes on by increase of the same symptoms, until the patient is condemned to absolute helplessness, but Charcot thinks that the disease itself never directly causes death.

In the absence of positive evidence from dissection of the true anatomical condition, it is permissible to consider the probable nature and seat of the lesion, as deduced from these symptoms. It will probably be readily admitted that this is a disease of the cord itself, and not of the brain or peripheral nerves; the question is, therefore, in what part of the cord is it situated? The disturbances of motor and reflex function point to the so-called motor divisions of the cord (antero-lateral columns, and anterior cornua) and of such parts the gray matter will be thought the more likely. The absence of alterations of sensation, of trophic changes, of bladder and sexual functions, of ataxy, all enable us to include a large part of the cord, the posterior white columns, the gray posterior horns, and the central gray matter. Indeed, the absence of muscular atrophy gives a probability to the conclusion that the anterior gray matter cannot be materially implicated. If the gray matter mainly participates in the affection, that part must be involved whose function we do not yet know (the reflex inducing part?). There remain only the antero-lateral columns, therefore, for the localisation of the disease. Can physiology aid us? Excepting the part known as Türck's columns, we know almost nothing of the function of that part of the columns called basis-bundle of the antero-lateral columns ("Grundbündel der Vorderstränge und Seitenstrang-reste") by Flechsig. As the anterior roots pass through them, it is probable that affections would spread to these and cause muscular atrophy and diminished reflex irritability, but both are absent in our disease; the localisation in these parts is therefore not probable. There remains, then, only the posterior division, which contains the "pyramido-lateral tracts", and the "direct cerebellar lateral tracts", carefully studied by Flechsig. Of the function of these last, we know nothing very precisely.

Woroschiloff has recently investigated the functions of the lateral columns in the lumbar cord of rabbits; and his experiments show, in brief, that the lateral columns contain those strands of fibres which directly unite the anterior roots with the motor centres of the brain, so that disease of the lateral

columns would explain the irritation and paralysis of motor fibres observed in our disease. Woroschiloff also found facts which speak for the presence of reflex controlling fibres in the lateral columns; it is possible to see in this an explanation of the increase of the reflex irritability of the tendons. Pathological experience confirms these views, for in the contractions and increase of tendon excitability after cerebral apoplexy, dissection has shown secondary degenerations of the lateral columns, also, when after lesions of the cord itself, secondary degenerations of the lateral columns supervene, the same symptoms appear; again, in amyotrophic lateral sclerosis, with paralyzes, contractions, and increased tendon excitability, anatomical investigation has repeatedly shown lateral sclerosis; lastly, Westphal has published an important case in which during life paralysis with twitchings, muscular spasms, increased tendon excitability, and alterations of sensibility occurred, while dissection showed sclerosis of the lateral columns, and slightly, too, of the posterior columns. As this last never produces paralysis and reflex phenomena, these appearances must have been due to the sclerosis of the lateral columns, and this case is a basis for the localisation of our disease in these columns. Westphal has seen the same in many cases, and has come to the conclusion that a defect in the continuity of the lateral columns is responsible for the increase of reflex excitability of the tendons.

The disease must be distinguished from the following: chronic transverse myelitis, tabes dorsalis, chronic atrophy of the anterior cornua, multiple sclerosis and paralysis of the cauda equina, also the hemiplegic form from cerebral hemiplegia, etc.

In transverse myelitis one finds regularly paralysis of the bladder, and bedsores added to motor paralysis; the symptoms show a well-defined horizontal limit, and do not tend to pass upwards, the cutaneous reflex excitability is generally greatly increased, atrophy may be present, etc. If paralysis, with contractions and heightened reflex excitability of the tendons, be absent, it would be easy to distinguish the above symptoms from paralysis spastica.

In tabes dorsalis the distinction is also easy, especially in the absence of paralysis, of affections of the tendons, of muscular spasms and contractions. But for the complicated cases where symptoms like these are combined with those of tabes, we must accept a combination of sclerosis of the posterior columns, with possibly a similar affection of the lateral columns. From chronic atrophy of the anterior cornua (poliomyelitis anterior chronica) it is distinguished by the presence of rapid and marked atrophy of the muscles, the loss of faradic and galvanic excitability, and the absence of reflex excitability of the tendons; also the more rapid development of this disease.

From multiple sclerosis there may be in some cases much difficulty in the diagnosis, and as this latter may first attack the motor parts of the cord, it is not always to be distinguished. Still in general the loss of sensibility, muscular atrophy, ataxy, tremor, difficulty of speech, affections of cerebral nerves, nystagmus, etc., give a characteristic appearance to multiple sclerosis which serves to distinguish it at the first glance.

From lesions of the cauda equina and other peripheral paralyzes the absence of affections of sensation and muscular atrophy, as well as the presence and increase of the excitability of the tendons, permit us to diagnose it.



Finally, the hemiplegic form must be distinguished from other forms of hemiplegia, and mainly from cerebral hemiplegia, for the spinal hemiplegia of Brown-Séquard is sufficiently marked by the crossed anæsthesia. But cerebral hemiplegia would generally be easily distinguished when one recollects that spastic hemiplegia begins, as a rule, in the lower extremity, and only slowly proceeds upwards, that the lower extremity is always more affected than the upper, that the muscular cramps and contractions develop early, that all cerebral phenomena and affections of cerebral nerves, headache, and vertigo, as well as loss of sensibility, are absent.

The prognosis does not differ from that of other chronic spinal paralyses, and relatively it is favourable at least for the duration of life, and even for possible improvement or cure. For these latter the particular circumstances of each case must be considered.

The treatment cannot be deduced from the small number of my observations. Of causal indications there were none. Of direct means the galvanic current gave the best results. Principally the spine, but also the affected limbs, were galvanised. Why Berger should think the latter hurtful I cannot imagine. Next to galvanism, I have seen good effected by a moderate use of the cold water cure, whilst I have seen bad effects from the use of "indifferent" temperatures. Of medicaments, nitrate of silver stands in the first rank. Iodide of potassium, arsenic, chloride of gold, etc., might be employed. Strychnine in the presence of the increased reflex irritability, should be avoided. Careful regulation of the diet, habits of life, exercise, sleep, and fresh air are, of course, necessary.

ROBERT SAUNDBY, M.D.

### SALOMON ON SPINAL PARALYSIS IN ADULTS.

In the *Berliner Klinische Wochenschrift*, for September 24th, Dr. Gottfried Salomon, of Hamburg, relates four cases of spinal paralysis occurring in adults, but apparently of a similar nature to infantile paralysis. Since Bernhardt first described cases of this kind, others have been published by Frey, Leyden, Erb, Eisenlohr, and Goldammer. The four cases here given occurred within the space of two years.

The first was that of a previously healthy man, aged about 20, who, after standing sentry one night in a deep snow, noticed in the morning an unusual feeling of fatigue in both legs; it was not, however, until the day following that the loss of power was such as to oblige him to keep his bed; the paralysis rapidly increased until he was quite unable to stand. Iodide of potassium was administered for several weeks, and the patient improved so far as to be able to walk a little with a stick; he was always, however, worse after any exertion, and his condition now became stationary. Sensation was perfect, reflex irritability normal, the bladder and rectum unaffected. The patient was rather unsteady when standing with his eyes shut; his general nutrition, as well as that of the parietic extremities, was good, and no other evidences of disease could be detected. In applying the induction-current directly to the muscles, a very powerful and painful current had to be used before

contraction was caused; the muscles of the leg were less sensitive than those of the thigh, and the peronei and tibialis anticus reacted worse than the muscles of the calf. The reaction throughout the right limb was worse than in the left. Muscular contraction was even more difficult to obtain when the current was applied along the course of the nerves; through the peroneal nerves, especially, it was only by the strongest current that the slightest reaction could be caused. By the galvanic current applied to the muscles, prompt, quickly ceasing contractions were produced. Under galvanic treatment, the case progressed favourably and the patient perfectly recovered.

A lady, aged about 25, who had had an attack of right sciatica, 1½ years ago, but had since been quite well, found one morning, after having danced a great deal the night before, that she was only able to move her right arm and leg imperfectly. For three weeks she was treated with purgatives, also occasionally with iodide of potassium, and some slight improvement took place; at the end of this time all movements were possible so long as the patient lay in bed; the pressure of the right hand was considerably less than that of the left, there was no wasting of the affected limbs, sensibility remained unaltered and the general health undisturbed. No pain had been felt from the beginning of the illness. The patient was able to walk slowly, but the right leg dragged; she could hold light objects in her right hand, but very soon it commenced to tremble a good deal, and she was quite unable to hold anything at all heavy. The results of the application of electricity to the affected muscles did not differ materially from those of the foregoing case, except that the muscles supplied by the right ulnar nerve were more sensitive to the galvanic current than the same muscles on the left side. The case was treated by galvanism for a fortnight, but, no improvement occurring, the patient was sent away for change of air and gradually but completely recovered.

The third and most carefully observed case occurred in a merchant, aged 52 (Duchenne of Boulogne had previously fixed the limit of age for these cases at 45 years); the disease came on so gradually that the diagnosis was for some time uncertain. The man had been previously quite healthy, and was a great walker; one day he noticed that his left foot repeatedly gave way under him; from this time he was unable to walk so much or so fast as previously, especially in cold weather he rapidly became fatigued. For three months he gradually became worse, and when first seen at the end of that time the whole left leg unmistakably dragged in walking. Some wasting both of the leg and thigh was also observed, the adductors being most affected. Sensation and reflex irritability were normal in both lower limbs, but they both showed some degree of hyperæsthesia; the functions of the bladder and rectum were undisturbed. Co-ordination of movements showed no alteration; the patient was able to stand with closed eyes for any length of time, and had suffered no pain. Tested by the induction-current, a loss of contractibility was shown by the adductors of the thigh as compared with the extensors, by the peronei as compared with the muscles of the calf, and by all the muscles of the left lower limb as compared with those of the right. When, however, the galvanic current was applied to the muscles, those of the left limb showed increased reaction as compared with those of the right; this was referred to the atrophy and consequent diminution of resistance to the cur-

rent. Applied along the course of the nerves, the galvanic current produced the same effects in the affected as in the healthy limb. At this time the disease was believed to be peripheral, and the case looked like one of peripheral rheumatic paralysis. For two months, treatment by galvanism and faradisation was carried on; the reaction of the muscles to the latter improved, the wasting to a certain extent disappeared, and the patient himself perceived an increase of strength in the affected limb. One night, however, he awoke with a peculiar painful sensation in the left arm; he went to sleep again, but noticed a loss of power in the left hand in the morning; the muscles of the hand gradually wasted and lost their contractile power; the condition of the left leg remained for some time stationary and then steadily became worse. Before the muscles entirely lost their power of reaction, the author noticed a phenomenon which he has only seen once previously described (by Benedikt). It consists in this, that, when a powerful induction current is applied to a muscle, it immediately contracts energetically, but the contraction at once ceases again as suddenly as if the current had been broken, although the latter really remains as strong as at first. This reaction may be caused any number of times in the same muscle with a slight pause between each application. Benedikt believes this phenomenon to be characteristic of disease of the brain, but Salomon has seen it in cases of nervous disease of undoubtedly peripheral origin, one of which ultimately ended in recovery. In the present case, the phenomenon could be caused for about a month, and was best seen when one pole was placed over the sciatic nerve below the gluteal fold and the other on the middle of the calf. A stronger current than that required to produce the result in question usually caused the contraction to last a longer time, and then pass into a trembling movement; a weaker current produced no effect at all. The patient became worse; as the galvanic treatment produced no good effects he was sent to take the baths at Rehme, but the disease progressed more rapidly, affections of speech came on, both as regards articulation and the memory of words, so that a fatal result from bulbar paralysis seemed probable.

The fourth case is very similar to the second. A merchant, aged 30, had had right sciatica a year and a half ago, and now complained of paralytic symptoms in the same limb, these rapidly increased and wasting was observed; before long some paralysis of the arm of the same side commenced. The effects of galvanism and faradisation were similar to those in the previous cases. The patient was treated by galvanism, centrally and peripherally, for eight weeks, and all the symptoms disappeared, first in the arm and afterwards in the leg; some slight wasting only of the latter was still observable when the patient was last seen.

Although the above cases, as well as those recorded by others, are similar in all essential points, they yet present many points of difference, especially in their degrees of acuteness and in the distribution of the disease. The four cases published by Goltzdammer were all more severe than the foregoing, but all ended in recovery, while the third of the above cases seemed to promise an unfavourable result. The resemblance of the cases now given to infantile paralysis is so great as to lead to the belief that they are due to the same anatomical lesion. It may therefore be concluded that, in the majority of cases, the primary disease exists in the anterior horns of the grey matter of the spinal cord (poliomyelitis), but the question as to the

nature of the morbid process still remains. *Post mortem* examinations in cases of infantile paralysis have almost all been made so long after the commencement of the disease that it is impossible to say whether the appearances found are the same as would have been observed soon after the original attack; the changes noted in the cord have also been various in different cases, sometimes signs of atrophy, at others those of inflammation; one observer has also noticed an alteration in the white substance of the anterior lateral columns. We must therefore believe with Leyden that various anatomical lesions may lie at the root of infantile paralysis, and that the same is true of the spinal paralysis of adults. In the above four cases, it is probable that a primary atrophic process occurred, because at no time were any symptoms present which could point to inflammation, although such are frequently observed in children at the very commencement of the disease. In none of the above cases was there any fever, increase in reflex movements, nor any galvanic reaction such as would indicate inflammatory affection of the cord.

The etiology of the foregoing cases is also interesting; in the first case it is almost certain that cold was the cause of the attack; in the second and fourth cases it is not improbable that the previous sciatica had something to do with the subsequent disease of the spinal cord, although it is difficult to understand how a chronic neuritis, after causing no symptoms for a year and a half, should affect the cord. Leyden, in one of his cases, in which a *neuritis lipomatosa* was found, believed that this latter was the cause of subsequent myelitis. In the third case the etiology was doubtful; this case showed that a temporary improvement in the electro-muscular contractility, and even also in the atrophic symptoms, must not always be taken as justifying a favourable prognosis. The author relies especially upon the electrical phenomena in this case as supplying a new proof of the identity of spinal paralysis in adults with infantile paralysis.

A doubt may remain as to whether, in the last two cases and others similar to them (in which, after the lower limbs have become affected, like symptoms appear in the upper extremity), the morbid process in the cord has extended upwards, or whether the lumbar and cervical enlargements of the cord are independently affected. In favour of the latter view are the facts that in none of the above cases was there any paralysis of the muscles of the trunk (which always occurs in acute ascending paralysis) and that in all necropsies of cases of infantile paralysis the two enlargements of the cord have been found to be solely or chiefly affected.

CHAS. S. W. COBBOLD, M.D.

## LANCEREAUX ON VISCERAL SYPHILIS.

IN the *Bulletin de l'Académie de Médecine*, No. 43, October 1877, is a report of a communication made to the Academy by M. Lancereaux, entitled "Note of a Case of Pulmonary Syphilis, with remarks upon visceral syphilis, and the errors of which it is the object." M. Lancereaux writes:

Forty years ago no one believed in visceral syphilis. Studied with timidity at first, then with more confidence, it has gained, little by little, till, at the present day, some physicians seem to think it amongst the most frequent of morbid conditions. *Post hoc, ergo propter hoc* would seem to be the motto of many; but this is far from scientific, and many disorders are now attributed to syphilis which do not



belong to it, just as new medicaments are vaunted above measure, and applied to all cases alike, only to return directly to the obscurity whence they emerged. So the knowledge which has been gained of visceral syphilis is in danger of falling into discredit. This is a serious thing, for if ignorance is calamitous, the loss of acquired facts is still more so.

The recognition of the manifestations of tertiary syphilis ought not to rest upon any simple coincidence of conditions, but upon special, and, so to speak, fundamental characters. These are furnished by the lesions, which are the indelible signs of the malady. Armed with this criterion, the physician follows a road in which there is no risk of wandering. Such is at least my conviction after long and patient research, not only into the pathology of syphilis, but also into most of the chief pathological processes.

First of all then, taking a simple case, I shall endeavour to prove, by the comparison of this with other facts, that syphilis, even when hidden in the depths of the organism, can be as surely tracked out by clinical analysis as a body forming part of some mixture can be isolated by chemical analysis.

A man aged 58, an hospital attendant in the employ of the "Assistance Publique," had, with the exception of pains in the head, been in good health till November 1876, when he was seized with dizziness, vomiting, and uncontrollable hiccough. To these symptoms and violent headache, a slight degree of muscular paralysis on the right side was soon added. He denied all history of venereal disease; but, as he was known to be a drunkard, and yet denied this, his repudiation of venereal disease was not to be depended upon. Under the influence of iodide of potassium and a seton at the back of the neck, he improved much; and there only remained slight weakness of the right arm and leg, and a slight deviation of the mouth. He went on well for four or five months, and then again suffered from vomiting and hiccough for some days. Then vision became indistinct in the right eye; he had a little cough and shortness of breath on exertion. He kept up his nutrition notwithstanding. The sight of the right eye became entirely lost, and then that of the left eye became affected; he had difficulty in walking, and ultimately was seized with a quiet delirium, soon accompanied by the loss of his intellectual faculties, and a semi-comatose state. The pupils were unequal. He became violently delirious, and then died.

*Necropsy.*—The skin was free from cicatrices; the skull thick and sclerosed; the dura mater was intact, but the other membranes, normal at the base, were slightly thick, and white at the convexity of the cerebral hemispheres. The Pacchionian corpuscles were thick, and hypertrophied. Placed upon its base, the brain divided into two halves, and allowed one to see between the lateral ventricles a yellow membranous mass, from three to five centimetres in extent, which occupied the place of the septum lucidum, now no longer in existence. The optic chiasma was injected, softened, and inflamed, as well as the tissue of the nerves at their origin. The optic papillæ were cedematous and injected. The rest of the brain was healthy. The lungs were closely adherent in their lower third, both to the thoracic wall and to the diaphragm; and they were cleft with deep fissures, like the syphilitic cicatrices found in the liver, and, like these, also filled by newly formed fibrous tissue. Between these clefts the parenchyma was, in some parts, indurated, in others, emphysematous. The visceral pleura was elsewhere thickened. The disease was symmetrical, but a little more advanced on the

right side than the left. The substance of both lungs presented similar lesions—viz., increased toughness of the lower lobes, well-defined gummata, of the size of hazel nuts, surrounded by a zone of greyish fibroid tissue, and tracts of whitish or blackish fibrous tissue, which, for the most part, radiated from a common centre. The bronchial tubes were dilated, and the glands voluminous and firm.

The other viscera showed nothing abnormal, save that the heart was fatty, and one kidney had a deep depression on its surface. The testes were fibrous, and the tunicae vaginales adherent.

A microscopical examination of the lungs showed that the whitish fibrous tracts were composed of a fibrillated connective tissue, like cicatrices. The gummata presented two distinct parts—the one central, unaffected by staining fluids, composed of degenerate elements grouped round blood-vessels, the walls of which were notably thickened, and the channels almost completely obstructed; the other peripheral, staining deeply, composed of small round cells, like embryonic connective tissue, some fusiform cells, and vessels with flattened epithelioid lining, thickened walls, but still patent lumen.

This examination seems to show that gummata commence as a periarteritis, which extends in successive circular layers, till at last the internal tunic is invaded, the canal obstructed, and the central part degenerates. At the same time, the neighbouring lung-tissue becomes compressed. Notwithstanding the want of evidence of syphilitic antecedents, M. Lancereaux considers that either the testes or the lungs in this case would supply indisputable and conclusive evidence of the existence of syphilis. The points on which stress are laid are, that syphilis produces material lesions, which are neither diffuse nor extensive, but always circumscribed and limited; and that its mode of development is quite peculiar. Thus insanity, general paralysis, progressive locomotor ataxy, and pulmonary phthisis—all of them maladies characterised by the very opposite of these features—are absolutely independent of syphilis. With a syphilitic patient, attacked with functional disorders of some important viscus, the brain for example, the diagnosis will rest upon the following points. Is there in the case a material lesion? If not, syphilis is not its cause. If there be, then is the lesion diffused or circumscribed? and in the last case only can the possibility of syphilis be admitted.

JAMES F. GOODHART, M.D.

## TEBALDI ON SURGERY IN RELATION TO MENTAL DISEASES.

IN a paper in the *Rivista Sperimentale di Freniatria e di Medicina Legale* (April-June 1877), Professor Tebaldi deals with surgery in its relations to the causes and treatment of mental diseases. He describes cases in which attacks of insanity have followed the performance of various surgical operations on the eye, the head, and other parts of the body. In one of these, in which the trephine was used for an injury to the temporal bone, we are told that the cure of the patient was followed by an attack of kleptomania; the patient manifested a strong desire to steal. He also refers to mental perversion with delusion as an occasional result of the use of anæsthetics, but this must be regarded as an exceptional occurrence.

The surgical maladies of the insane are similar to

those of sane patients; but there are some peculiarities of surgical treatment which the condition of insanity renders necessary. The wounds or other injuries which they inflict in attempts at suicide are often of an unusual kind, and require special surgical treatment. Insensibility to pain (*analgesia*) often leads to the result that they do not suffer like the sane from serious personal injuries. Unless sought for and discovered, these injuries may give rise to surgical maladies of a dangerous kind. Tebaldi's experience seems to have been chiefly among those suffering from pellagra, where this singular disease of northern Italy is accompanied with mental disorder. The self-inflicted wounds which he has had to treat in these cases have been of a most complex kind, involving parts dangerous to life.

The treatment of severe lesions is another form in which surgical aid is required; and the same may be observed of the attempts to swallow knives, forks, and spoons, or other foreign bodies, where these are incautiously allowed for daily use.

Another matter which receives consideration, is the frequent occurrence of osteomalacia or softening of the bones in the insane. This state of the bones may not be discovered until after death, when fractures are found which may be wrongly assigned to severe acts of violence on the part of the attendants. Tebaldi considers this condition to be owing to a softening and atrophy of the cortical part of the bone, with hypertrophy of the medullary canal, and fatty degeneration of the surrounding parts. These changes in bone have the effect of rendering its substance more brittle, and easily liable to fracture. They are especially noticed in the ribs, and deserve the attention of the surgeon from the variety of causes and the slight amount of force required to produce a fracture. The putting on a strait waistcoat; a sudden movement of the arm, leg, or body, made by the patient himself; a severe fit of vomiting or coughing, or violent muscular spasm, are all conditions which may give rise in such cases to fracture, and lead to suspicion of undue violence having been used.

Tebaldi observes that fractures of the ribs are not likely to be discovered in these insane patients during life. The absence of displacement, of crepitus, and of any expression of pain on the part of the patient, are circumstances which tend to throw the surgeon off his guard; and yet the fracture of one rib only may be a cause of death.

The knowledge that these changes do take place in the bones of the insane should teach the medical attendant caution in the application of personal restraint. The strait waistcoat (*la camiciola di forza*), when resorted to, should be applied without using undue violence, or fractures will result, which may not be discovered until after death, and only by a *post mortem* examination.

It is well known that insane patients frequently refuse to take food, liquid or solid. In this case, surgical appliances are required for conveying food into the stomach. The practitioner is here cautioned respecting the use of feeding tubes, and the dangers that may arise from the violent resistance of the patient. Among them, Dr. Tebaldi specifies the passage of fluids or solids into the trachea, causing sudden death by asphyxia. He considers the better plan to be to pass the tube by the nostrils than by the mouth; and, in order to guard against the entry of the end of the elastic tube into the glottis, he advises that this should be slightly curved, and the convex portion oiled, and passed down in close

contact with the posterior wall of the pharynx. The obstacle to the use of the tube by the nostrils is the narrowness of the parts through which it must be passed. The accidents which may attend this operation, even sometimes under skilful hands, are nasal hæmorrhage, perforation of the pharynx, the injection of liquids into the trachea and bronchi, and vomiting during the operation. In one case, during the act of vomiting, the patient died from asphyxia (Merat.)

The employment of the catheter to empty the urinary bladder is another surgical operation required for the insane. In cases of paralysis, the bladder is sometimes enormously distended, the patient, owing to morbid anæsthesia, giving no indication of pain or uneasiness. Under these circumstances, the surgeon must examine for himself. In all cases where the patient is suffering from general paralysis, the condition of the bladder requires close attention. Tebaldi found paralysis of this organ in many of his patients suffering from pellagra.

In concluding his paper, the author observes that his object has been to collect and present in a concise form the facts regarding the surgical treatment of the insane which have fallen under his notice, and which have formed the subject of his clinical lectures.

A. S. TAYLOR, M.D.

#### DRANSART ON MINERS' NYSTAGMUS.

M. DRANSART read an interesting paper on this subject before the French Association for the Advancement of Science, at Havre, on August 24th. He alluded to the observations of Decondé, Léon Noël, Nieden, Schroter, and A. von Graefe, and stated that the affection was scarcely recognised in France. The paper, which was based on twelve cases observed by the author, treated fully of the symptomatology, course, diagnosis, prognosis, etiology, pathology, and treatment.

*Symptomatology.*—The nystagmus consists of an involuntary and rhythmical oscillation of the eyeballs. The number of oscillations varies from 50 to 140 in the minute. The oscillations are vertical or horizontal; often the two forms of oscillation are combined, causing a rotatory movement of the globes. The oscillations are always synchronous, but they are not always equal in extent in the two eyes. In all cases where this inequality in extent of motion was observed, there was double vision. The oscillations are most readily excited when the line of vision is raised above the horizontal plane of the two eyeballs. Work in the pit, movements of the body, excite the nystagmus by causing this position of the line of vision. Darkness, a bright light, or anything which depresses the general health, also aggravate the oscillations; excess of spirituous liquors acts in the same manner, but during the drinking bout the nystagmus is less, the elevator muscles having more tone and being better able to preserve their equilibrium. There is nothing characteristic in the facial appearance of the patient. In all the cases observed there were marked anæmia, hæmic murmurs, disorders of digestion, stitches in the side, and sweatings. An intimate relationship between the general condition and the nystagmus was observed. In proportion as the anæmia improved under treatment the nystagmus also diminished, and *vice versa*.

The patients complained of headache, with sensations of fulness and tingling in the eyeballs. Exactly



the same symptoms are seen in asthenopia, diplopia, weakness of the internal recti, and paresis of the superior recti and the inferior oblique muscles. In all the cases in which the investigation was made, the author found weakness of the superior recti and of the inferior oblique muscles. This weakness and the nystagmus went hand in hand; in proportion as the former became less, the latter also diminished. The accommodation is always defective; but, as the nystagmus becomes less the paresis of the ciliary muscle disappears. The refraction is natural; the fundus healthy.

During the attacks of nystagmus, vision is blurred. During the intervals, sight is generally perfect. In one case in which the affection had lasted for a long time a decided sluggishness of the retina, with narrowing of the field of vision, was present. Some affection of the fundus was suspected, but the patient completely recovered.

*Forms of the Affection.*—The nystagmus is nearly always the same. There are two varieties. In the first, which comprises the great majority of cases, the oscillation in the two eyeballs is equal in extent; in the second form it is unequal, and there is always double vision.

*Duration.*—The affection may last for five or six years. As a rule, when recovery takes place, even at the end of that time, the sight is unimpaired. The author suggests the possibility of the sluggishness of the retina which was present in one of his cases continuing sufficiently long to become permanent.

The *Diagnosis* is easy. Even where there is some narrowing of the field of vision from sluggishness of the retina, the peculiar character of the oscillations, the absence of any lesion in the eye itself, and the occupation of the patient, will prevent mistakes.

*Etiology.*—The affection is almost confined to coal-miners. All other underground workers are exempt. The ages of the patients varies from 20 to 50 years. The affection is rare, 5 cases occurring amongst 10,000 coal-miners.

*Pathology.*—While admitting that the air of the mine and the darkness may in some measure predispose to the affection, the author thinks that the chief cause is the position in which the miner is obliged to keep the eyeballs while at work; he must constantly look above the horizontal line of sight. In this position the superior rectus and the inferior oblique muscles are always on the stretch. In consequence of this excessive work a "myopathy" is set up in these muscles, as a result of which they are unable to overcome their antagonists by a single effort; a repetition of short rapid contractions therefore takes place, causing the nystagmus. When the internal recti are affected, horizontal oscillations occur.

The author adds that he has in all cases seen this "myopathy" accompanied by anæmia, and deficient accommodation. And since these factors are always in direct proportion to the nystagmus, he concludes that they have some influence in its production.

*Treatment.*—M. Dransart recommends iron, quinine, strychnia, electricity, and work in daylight. The electricity ought to be applied chiefly to the muscles which elevate the eyeball, and to the internal recti.

BYROM BRAMWELL, M.D.

## KRAFFT-EBING ON CLIMACTERIC INSANITY.

In the *Allgemeine Zeitschrift für Psychiatrie*, Band xxxiv, Heft. 4, Professor von Krafft-Ebing, of Graz, discusses the relations of the climacteric period to insanity. A woman's mind is influenced in three distinct ways by the climacteric. 1. It is natural that at the time of cessation of her sexual functions, all the circumstances of her past life, whether they have been happy or otherwise, should be brought vividly before her, and form the subject of continual reflection; not unfrequently, especially if adult life have been unsuccessful or unhappy, the result of these broodings is painful mental depression or worse. 2. The changed and often pathological general sensations which accompany the climacteric process of involution often lead to hypochondriacal troubles, the fear of severe bodily disease, such as cancer, etc. The patient's nervousness is also increased by the knowledge that the climacteric is generally admitted to be a period critical to life and health. 3. The psychic functions are directly influenced by the functional and organic physical changes which take place in the body at the time of the climacteric, and which vary from the slightest physiological disturbances to the most severe pathological changes. These three modes of origin of psychic disturbance have all the more power if the central nervous system be already overworked, or perform its functions abnormally.

The ways in which purely physical causes accompanying the climacteric process influence the psychic organ are various, very complicated, and not yet made sufficiently clear. Above all, it must be maintained that the climacteric is not merely a cessation of function and commencing atrophy of the organs of generation, but involves a general disturbance of the whole system, causing changes in the distribution of the blood, consequent alterations in the secretions, etc. The influence of these disturbances on the nervous system is greater if the power of resistance of the latter have been previously diminished by difficult labours, prolonged lactation, or other causes; also if some severe disease coincide with the climacteric, or if the genital apparatus have been long affected with chronic disease.

The concrete possibilities are these. (a) Menstruation becomes excessive, causes anæmia and consequent disturbance of nutrition of the cerebro-spinal system; profuse leucorrhœa has the same effect. (b) The menses cease suddenly. In these cases, severe disturbances of the nervous system are frequently seen, but the pathogenesis is not clear, even though vicarious hyperæmia be admitted as playing an important part. The same cause (acute disease, fright, uterine affections, etc.) which brings about the cessation of menstruation, may often be recognised as causing the nervous symptoms. (c) Uterine diseases, either arising at the time of the climacteric, or pre-existent, but aggravated at this period, exercise (by affecting the constitution, or directly through the nerves) a harmful influence on the central nervous system. (d) Neuroses of the genitals (pruritus, vaginismus, etc.), which have been caused by the climacteric, have a like effect. (e) There is no doubt that, apart from any local disease or neurosis, the climacteric process, as such, causes disease in, or otherwise affects, the psychic organ in some way not clearly understood, but evidently through the nerves, and only when its functions had

previously been to some extent abnormally performed.

The climacteric process always influences in some degree the central nervous system; venous hyperæmia of the mucous membrane of the alimentary canal, with its consequences, is common, and patients are at this time more susceptible to the ordinary causes of disease. Elementary psychic changes are also very common at this period, the patient's character often being quite altered.

Among 878 insane women, Krafft-Ebing found 60 (6.8 per cent.) cases in the etiology of which the climacteric appeared to have played a part. In 40 of these cases there were previous functional disturbances of the nervous system, either congenital or acquired. In 25, hereditary taint was proved; in 22 it was doubtful, and in 13 it was certainly absent. These constitutional affections were much more frequent as predisposing causes of disease than accidental causes operating at the time of the climacteric itself, e.g., diseases of the uterus or other viscera, various excesses. It seemed to be immaterial whether the patients had borne children or not.

The author does not believe that there is any special form of insanity which can be recognised as being caused solely by the climacteric. In this he disagrees from Tilt and Skae, but he considers that the climacteric is a predisposing or exciting cause, which in many ways influences the form and course of the disease, thus lending it features which, when observed, would go far to establish the belief that the case was due to the climacteric process.

In the 60 cases the following forms of insanity were observed: Melancholia activa, 4; *Folie circulaire*, 1; acute delirium, 1; general paralysis, 12; primary delusional insanity (*Verrücktheit*), with delusions of persecution, 36; ditto with religious delusions, 6.

Certain sensations and anomalies of function, which frequently accompany the climacteric, exercise an influence over the psychic organ, partly through the patient's own consciousness and partly by reflex action, in such a manner as to give a peculiar character to the delusions, hallucinations, etc., which are the expression of the psychosis occurring at this period. This is especially true of the last and most numerous class of cases mentioned in the above list.

In all four cases of melancholia, hallucinations of hearing and sensation were numerous; in only one there was hallucination of smell. In all the cases there were delusions of poisoning, and in two *tedium vitæ*. The hypochondriacal symptoms, which have been much insisted on, were absent.

In the 36 cases of primary delusional insanity with prominent delusions of persecution, the influence of the process going on in the genital apparatus on the character of the delusions cannot be denied. In 20 of the cases these last were of a sexual nature; in six cases hallucinations of the sense of smell were observed, the patient either believing that she perceived a stinking smell, or hearing voices which complained of the same thing. The delusion of being physically influenced for evil was noted in ten cases.

Great importance is attached by the author to the hallucinations of smell, and to the delusions of physical persecution, which were always dependent on paralytic eccentric sensations. At present he has never observed these in any case in which sexual functional disturbance was not present, e.g., masturbation, uterine disease. The paralytic sensations are due to irritation of the sensory apparatus of the spinal cord. Looking to the great frequency of

hallucinations of smell in onanists, as compared with their great rarity in psychoses generally, it seems that the centres of the sense of smell must stand in close relationship with the genital nervous system, and be easily irritated by excessive excitement of the latter.

In 28 women suffering from the same form of insanity, but which had not commenced at the time of the climacteric, only three were found to have delusions of sexual persecution; not one had hallucinations of smell, and only four had delusions of physical persecution. In all these seven cases, some functional or anatomical anomalies of the genital organs was present. In four cases of pre-existing insanity of the same kind, the character of the delusions became sexual at the time of the climacteric, although they had never been so before. Of the above 36 cases, 32 had hallucinations of hearing, six of sight, six of smell, and two of taste.

In the six cases of insanity with religious delusions, the latter partook of a sexual character, e.g., connection with the heavenly bridegroom, being pregnant with the Son of God.

There were only six recoveries among the whole 60 cases—viz., melancholia, 4; delusional insanity, 2. The bad prognosis in cases of insanity coming on during the climacteric, has already been pointed out by Morel, Griesinger, Schlager, and others.

The treatment is not discussed, but attention is drawn to the favourable influence of large doses of bromide of potassium, in allaying sexual excitement and the consequent paralytic and hallucinatory phenomena; also to the good results yielded by morphia, when employed against hallucinations of hearing, connected with auditory hyperæsthesia and delusions of persecution.

CHAS. S. W. COBBOLD, M.D.

## BROWN ON THROMBOSIS AS A CAUSE OF DEATH IN CHOLERA INFANTUM.

IN the *Philadelphia Medical Times*, September 15, 1877, Dr. Bedford Brown, of Alexandria, Virginia, has a paper on Thrombosis of the Brain, Heart, and Pulmonary Artery as a cause of Mortality during the progress of Cholera Infantum, and its Prevention. He says:—

A very considerable proportion of the mortality arising from cholera infantum is due in reality to the development of thrombosis, either of the brain, heart, or pulmonary artery.

The pathological indications, both of the approach and full establishment of this condition, are highly characteristic, and differ materially from those of simple collapse attending cholera infantum.

*Causes.*—The original causes of these peculiar complications are not local in character, but are of a general nature, and are due manifestly to certain powerful impressions on the nervous centres and the vaso-motor system by the action of a high degree of solar temperature, by which that system and the great nervous centres, the brain and spinal cord, suffer from a state analogous to functional paralysis of a partial or incomplete character. Consequent and secondary to this influence, a series of changes occur in the vital and mechanical constitution of the blood, by which its solid and fluid constituents are rapidly separated, the latter being drained off from the former through the intestinal canal by exosmosis rather than by secretory action.

In infancy, the vital and chemical affinities existing between the blood-constituents are not so close and



intimate as in the adult constitution. This fact is observed in the facility with which the fluid portions are drained off in ordinary cases of diarrhoea. With the vaso-motor system partially paralysed from the action of intense heat, and the blood largely deprived of its fluid, saline, and albuminous properties, a general condition is established, exceedingly conducive to thrombosis either in the heart, pulmonary artery, or brain.

That complication of cholera infantum, heretofore termed *congestion* of the brain, has ever been regarded as one of the most alarming and grave to which infantile life is liable. In the vast majority of these supposed cases of congestion of the brain and effusion in the cranium occurring in this disease, thrombosis is the true pathological condition; while passive congestion and serous effusion, if any, are only the remote results of the former. The mere designation of this class of cases as *congestion* does not by any means explain their real character and import. At the same time, it tends to divert the attention of their true causes and the proper means for their correction.

The prime and original cause of a large majority if not all of those morbid phenomena which constitute the elements of cholera infantum is found, as before stated, in an intense degree of solar heat acting on the tender organism of infancy, in which the nervous centres, the sympathetic system, and the blood-making process suffer principally. This truth is manifested in the excessive languor of the voluntary powers, the irregular, depressed, and frequent action of the heart, the inactive state of the digestive powers, and the torpor of the nutritive and secretory functions. In consequence of this dangerous depression of the nervous system, disorganisation and disintegration of the blood very soon begin, and proceed rapidly to a separation of its solid and fluid constituents by this process of exosmosis. In most of these cases, there is no evidence whatever of local lesions in the intestinal canal to explain this process of exosmosis by which the constituents of the blood are so speedily separated.

The action of the heart in bad cases of cholera infantum becomes so enfeebled and irregular from the paralysing influence of heat on the vaso-motor system, as is seen in the vomiting and purging, as to fail to propel the blood completely through the round of the circulation. Hence, when the vital influence of this system is lost to the circulatory organs, coagulation is liable at any time to occur in the heart and vessels.

*Symptoms of Thrombosis of the Brain.*—Thrombosis of the brain in cholera infantum is usually preceded for several hours by excessive restlessness, jactitation, and indisposition to sleep. When the condition has been fully established, the first intimation may be either general eclampsia, partial convulsive movements confined to one side, one limb, or even the muscles of the face; while there may be in other cases of a still more serious character, stupor, rapidly merging into profound coma.

Under these circumstances, the temperature of the body and extremities falls rapidly below the natural standard, while that of the head is rather increased.

This is also true of the early stages of embolism, or thrombosis, confined to the principal veins of one of the limbs. Immediately following the impediment there is rapid increase of heat below that point in proportion to the œdema, then as sudden and rapid decline, until local death takes place. In the preliminary and primary stages,

the pupil is always contracted. To such a degree does this take place, that it is generally reduced to the dimensions of a pin-hole. But as the convulsive movements subside and the comatose phenomena appear, the iris expands until it becomes a scarcely discernible ring, resembling the pupil of one under the profound influence of belladonna. Hence, a very contracted pupil occurring during an attack of cholera infantum denotes with much certainty a tendency to thrombosis of the brain. During the early stages of this latter condition, the pulse always begins to increase in frequency, until during the climax the alteration is so great that the rate cannot be calculated.

*Thrombosis of the Heart and Pulmonary Artery.*—This complication usually appears in cholera infantum after a large number of serous intestinal discharges, copious in quantity, have taken place in rapid succession. It is always preceded by acceleration and difficulty of respiration, which continue to increase in proportion to the thrombic disposition. Thus, any unusual dyspnoea of a fixed character during the progress of serious cases of cholera infantum, without the presence of other pulmonary lesion, is a harbinger of evil, and denotes that thrombosis of the heart or pulmonary vessels is threatened. In simple collapse the complexion is *pallid and white*. But in thrombosis *lividity*, beginning in the extremities and lips, is always present, and denotes its development very early.

In some cases of this kind, lividity has been observed to such extent as to resemble asphyxia. The suffering infant gasps for air, as if labouring under some serious pulmonary disease of an inflammatory character. Yet in such cases the respiratory murmur is not only clear, but unusually loud and puerile. On the contrary, the cardiac sounds are found to be exceedingly imperfect and the rhythm irregular, while the action of the heart is painfully tumultuous, rapid, and feeble. Many of those extraordinarily sudden deaths from cholera infantum are really due to this complication. In some cases death occurred in from three to five hours after its development.

*CASE I. Thrombosis of the Brain.*—A healthy infant, of eleven months, was attacked in the night with cholera infantum; and, by nine o'clock in the morning, when first visited, had had ten or twelve copious discharges, with frequent vomiting. At that time all the indications were present of impending thrombosis of the brain, consisting of an excessive restlessness, contracted pupils, great frequency of pulse, partial stupor, muscular contractions and also strabismus. These symptoms increased rapidly in gravity, and speedily ended in paralysis of one entire side, while the muscles on the opposite were in a state of constant automatic movement. Profound coma, with extreme dilatation of pupils, terminated the scene.

*CASE II. Thrombosis of the Heart.*—An infant of only eight months, of previous good health, was attacked with cholera infantum of a violent type. When first visited, only ten or twelve hours after the onset, the respiration was so much accelerated and difficult as to call attention to the condition of the lungs. But the respiratory murmur was found perfectly normal. The complexion was so livid as to resemble that of a child partially asphyxiated. Such was the difficulty of respiration that any exertion, even the acts of crying, taking water or nourishment, caused excessive dyspnoea. The systolic sound of the heart was entirely abolished, while in place of the rhythmic

sounds there were only confused and irregular murmurs of an indistinct character.

These are true types of thrombosis, occurring during attacks of cholera infantum, which have not unfrequently come under my observation in past professional experience. Than these there are no morbid affections to which infancy is liable that are more fatal in results.

*Treatment.*—When thrombosis or embolism is once established in an attack of cholera infantum, the removal of the condition is of such a hopeless character that treatment, except for alleviation, is worthless.

On the contrary, much may be accomplished, both by therapeutic means and by a rational system of diet, to prevent the occurrence of these very grave complications. In the first place, it is necessary as far as possible to avoid the paralyzing influence of a high degree of temperature on the system. A change of 20° will almost invariably accomplish that result. If this be not practicable, then one of our best correctives is the use of the cold bath systematically night and morning, followed by ample and efficient friction previous and during the attack. Whenever reaction follows, good is certain to result. Secondly, vomiting and purging must be arrested, for the purpose of preventing undue waste from the blood-vessels. For the latter, the remedies are enemata of water, frequently repeated, containing in minute solution alum or tannin, glycerin, and an appropriate proportion of tincture of opium. In these cases water is better than starchy matter as a vehicle, as it aids in supplying the wasted serum. To arrest vomiting, bismuth combined with minute quantities of cerium and alum, and the free use of ice and iced gum-water, are advisable.

There is one principle in regard to the administration of medicine which is often lost sight of—that is, minuteness of dose and frequency of time. I am convinced that much is lost often by making the intervals between the doses too long. From thirty minutes to an hour is a sufficiently long interval. A longer period than the former is often a dangerous delay. By this assiduous practice, we can generally succeed in arresting undue drainage. The metallic astringents appear to act in these cases, when greatly diluted, on the mucous surface of the stomach and intestines, particularly the alum, as a decided sedative. To correct that dangerous depression of the vaso-motor system, which often amounts to absolute paralysis of the entire organic system, the free use of alcoholic stimulants is necessary. I have known an infant of twelve months, with a very dangerous attack of cholera infantum, to take a half-pint of good brandy in twenty-four hours with marked benefit.

One of the most important questions in this connection is that of maintaining the organic constituents of the blood in a complete state of solution. The blood cannot lose its fluid elements below a certain point, without also losing its capacity for circulation through the capillaries. When this is reached, then death ensues from capillary stasis. Hence the necessity, in this and kindred affections, of the copious ingestion of fluids. Death does not result from the mere local disease of the bowels in cholera infantum, but from certain blood-changes produced by inordinate drainage and depression of the nervous system, resulting either in thrombosis or capillary stasis. In these cases it is but little of the solid elements which are lost, but the serous; thus it becomes our imperative duty to unremittingly replace this lost serum.

The method formerly was to restrict patients with

this affection in the use of water and other fluids. I have lived to see both systems fairly tested, and am convinced from experience that the abundant use of cold water is not only a refreshment, but a necessity in these cases. I am also convinced that under the former method these little patients have not only been made to suffer fearful torture from the *careful* and *studious* deprivation of cold water, but that a large mortality has resulted alone from this cause.

Iced gum-water may be used *ad libitum* in bad cases. Nutriment must also be given in a perfect state of solution, ready for rapid and easy absorption.

In this way, the blood is kept supplied with a sufficient amount of fluid material to retain its solid elements in a complete state of solubility, while the heart and great vessels have ample bulk to act on and propel the vital fluid forward to the capillaries.

The form of the particular nutriment to be adopted in cholera infantum is a question of vital moment, and one on which depends the final result.

In these patients, it is too often the case that this is regarded in the light of a secondary matter, while all importance is attached to the power of medicine. Such is the difficulty of digestion and absorption of nutriment, and the utterly indigestible character of that generally used in these attacks of this affection, that not unfrequently the little patient survives the attack by living alone on the materials of his own body, which are only renewed after the power of digestion is restored. During an attack of cholera infantum, food containing fibrinous or caseous matter cannot be digested. Albumen in extreme dilution, as that of eggs beat up and highly diluted with sweetened water; the water in which good bread or crackers have been boiled; mutton or lamb-broth, very delicately made; beef-tea, made only by extracting the juice of the fresh lean meat with cold water, and then properly cooked, constitute forms of nutriment which can be absorbed and carried into the circulation without difficulty.

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## ANATOMY AND PHYSIOLOGY.

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ZUCKERKANDL ON THE TRABECULÆ OF THE HEART.—In the April and May numbers of the *Allgemeine Wiener Medizin. Zeitung*, Dr. Zuckerkandl calls especial attention to the muscular and fibrous trabeculæ of the heart. The former he describes as starting from a ring of muscular ridges surrounding the auriculo-ventricular opening, thence running in parallel ridges along the posterior wall of the ventricle as far as the papillary muscles, where they break up into a fine network. The ventricular septum on both sides is almost smooth; the depressions between the ridges increase the superficies of the interior of the heart, and thus bring a greater contractile surface to bear upon the blood-wave.

The fibrous trabeculæ are free in the middle and attached at both ends, and consist chiefly of endocardium, with a few muscular fibres in their interior. They are found especially in the neighbourhood of the papillary muscles. Occasionally narrow tendinous bands are found crossing the cavity of the left ventricle, generally between the septum and the papillary muscles. At the apex, they may form a network. These bands sometimes give rise to musical sounds.

The author further states that muscular fibres are found in the ventricular aspect of the tricuspid valve, especially at the apex. By shortening the apex, they



prevent any tendency to folding which might occur during the systole. J. C. EWART, M.B.

LANKESTER ON EMBRYOLOGY.—An essay by Professor Lankester (*Quarterly Journal of Micros. Science*, October) aims at the development of a theory advanced by him in the *Annals and Mag. of Nat. Hist.*, May 1873, in an article on "The Germinal Layers of the Embryo as the Basis of the Genealogical Classification of Animals." It was there indicated that there were three grades of developmental complexity in the animal kingdom—the homoblastic, diploblastic, and triploblastic; and that the diploblastic and triploblastic, after passing through a "polyplast stage", enter what is termed a "planula phase", where the organism forms a simple sac of ectoderm and endoderm. Such a planula was the common ancestor of all the diplo- and triploblastic, its layers originating in two different ways; (a) by "delamination", i.e., formation of an endodermal layer of cells from the inner face of a hollow polyplast by stripping off—a mode of origin confined to a limited number of zoophytes; (b) by "invagination", or a folding in of the wall of a single layered sac, resulting in a double layer, whilst the orifice of invagination remains open or closes up. Now the mouth of the "delaminate planula" results from the breaking through of its walls, with an accompanying ingrowth of ectodermal cells. Are we to assume that the orifice of invagination alluded to above is homogeneous or identical with the disruption mouth of the delaminate planula? Professor Huxley distinguishes the "archæostomatous", where the orifice of invagination persists as the mouth, from the "deuterostomatous" where it disappears or becomes the anus, whilst a secondary mouth forms by disruption. Professor Lankester, however, not only doubts this substitution of a secondary for a primitive mouth, but is not inclined to regard the orifice of invagination as a mouth at all, and terms it for distinction the "blastopore". His conclusions generally are as follows. A hollow polyplast (a vesicle of a single layer of cells) becomes a planula (a vesicle of two layers) by (1) delamination, or by (2) invagination and closing of the blastopore. The latter is by far the more usual process, and the closing of the blastopore leaves the invaginate planula identical with a delaminate planula. That historic and developmental form, Haeckel's "gastræa", originating by invagination, during which the orifice of invagination becomes the mouth, is shown to be identical with the diploblastic planula, but the author differs from Haeckel and Huxley in refusing to admit the identity of blastopore and mouth, or the exclusive origin of the diploblastic by invagination. Reviewing historically the phases passed through by the ovum, he proceeds to state that the amount and disposition of food directly affect arrangement and size of the segmented cells, and hence become the "source of discrepancy between the inferred ancestral and actual developmental phases." From the monoplast by segmentation we get the polyplast or morula of Haeckel, which, by accumulating fluid at its centre, becomes a hollow sphere or "blastula" (Haeckel). Differentiation of the single into a double layer by delamination introduces us to the diploblastic planula, consisting of an ectoderm or deron, and an endoderm or enteron, enclosing the general enteric cavity. The growth of cilia and the development of locomotion account for the localisation of absorbent surface, where eventually the mouth is formed by rupture, or rather by a process of "irrup-

tion" with the accompanying ingrowth of ectodermal cells. Proceeding by the light afforded by the doctrine of heredity to consider the hypothesis of a substitution of invagination for delamination in the early stages of individual development, he explains away the difficulty regarding the apparent persistence occasionally of the blastopore as a mouth or anus as being merely a case of *adaptation*, and fully illustrates this view by reference to members of the cephalopoda and gastropoda. The difficulties involved in the acceptance of Haeckel's gastræa theory are then considered, and the superiority of the "planula theory" is dwelt upon. Space precludes the consideration of the extensive field passed over in this article, but it may be stated that under the heading of "General Causes and Modes of Development", the structure and functional activities of organisms in their mutual relationships are briefly summarised, and it is pointed out that development is *primarily* caused by the advantage gained for an organism in its struggle for existence by the distribution of its functional activities and the possession of elaborate tissues and organs, whilst the possibility of development is "solely due to the physico-chemical constitution of protoplasm, in virtue of which constitution it is subject to (a) *unlimited variation* by the action of incidental forces, and to (b) the *permanence of impressions or memory*." Professor Lankester concludes his interesting and valuable essay by a chapter on the classification of the animal kingdom. BEVAN LEWIS.

SENATOR ON THE EFFECT OF VARNISHING THE SKIN IN MAN.—When an animal, such as a dog or rabbit, is coated with an impermeable varnish, the temperature of its body falls, serious symptoms ensue, and terminate in death. Suppression of the excretory functions of the skin is usually stated to be the cause, or, at any rate, one of the causes of the phenomena in question. It is often assumed that similar results would follow varnishing in the human subject; and the assumption is supported by the old story of the boy who lost his life in consequence of being coated with gold-leaf, to represent an angel in a religious ceremony. Senator has put the question to the test of experiment (*Virchow's Archiv*, Band lxx). Two healthy men allowed their limbs to be coated with impermeable plasters, while the trunk was vanished with several layers of flexible collodion. Nearly a week was allowed to elapse before these applications were removed. None of the evil consequences invariably observed in animals made their appearance; there was no fall of temperature, no albuminuria, no exhaustion, no dyspnoea, convulsion, or paralysis. Senator concludes that the gilded boy was probably poisoned by some ingredient in the material applied to his skin.

KÜHNE ON THE COLOURING MATTER OF THE RETINA IN ITS RELATION TO VISION.—The discovery of the so-called "retina-red" or "retina-purple" by Boll, has led to the adoption, by some authors, of the hypothesis that the chemical products resulting from the decomposition of the retinal pigment by light, stimulate the terminations of the optic nerve; and that this photo-chemical process is an essential factor in ordinary vision. Kühne has set himself to show that this hypothesis is, to say the least, premature (*Untersuch. aus dem physiolog. Institut in Heidelberg*, Band i, Heft 2). He points out that the retina of many birds and reptiles, whose faculty of seeing is beyond question, contains no

purple; and that this is likewise true of the most sensitive portion of the human retina—the *fovea centralis* and its immediate neighbourhood. The large retinal rods of the river cray-fish contain a great deal of pigment; but this is singularly indifferent to the action of light, exposure to the sun's rays for several hours failing to bleach it. From these considerations it is clear that the retinal pigment cannot be essential to vision in all animals; while, from its indifference to light in some of the invertebrata, it would almost seem to be analogous to the other varieties of colouring-matter, so often present in different parts of the eye—*e.g.*, the yellow of the *macula lutea*, the coloured oil-drops in birds and reptiles, the yellow of the lens in many fishes, the orange protoplasm recently discovered by Dr. Ewald in the anterior layers of the cornea of the perch. The following experiments show that in the frog, whose retinal rods contain a very sensitive kind of purple, the power of distinct vision, and the faculty of distinguishing colours, survive complete bleaching of the retina by direct sunlight. Frogs exposed to the sun for more than an hour (the retina is quite decolorised by exposure for fifteen minutes) were found to be able, not merely to elude all attempts made to lay hold of them, but also to capture flies; blind frogs, of course, being unable to do either the one or the other. Again, if a number of frogs are confined in a shallow dish, one half of which is roofed with green, the other half with blue glass, they will, in a short time, be found huddled together under the green portion of the roof. This preference for green over blue is exhibited by a vast majority, both of *Rana esculenta* and *R. temporaria*. Possible fallacies which might arise from the unequal diathermancy of the two kinds of glass, unequal intensity of illumination, etc., were carefully eliminated. It was conclusively ascertained that the preference was connected with the colour, and not with any other property of the glass. Having settled this point, Kühne introduced a number of blind frogs into a vessel of this sort, and found that they showed no preference for one part of it rather than another; while frogs that had been exposed to the sun for hours, and whose rods no longer contained any trace of purple, speedily took refuge in the green half of their prison-house.

## PATHOLOGY.

**BURRESI ON TUBERCULAR DISEASE OF THE BRAIN.**—The *Rivista Sperimentale di Freniatria e di Medicina Legale* for April–June 1877, contains the report by Professor Pietro Burresi of a case of tubercular disease affecting the right hemisphere of the brain. The patient, a robust woman of the peasant class, came under his observation in January 1874. About a year before her admission into his clinical ward, she complained of a pricking or stinging sensation (formicatio) in the left arm. This was followed by an epileptic attack, the convulsive movements being very strong in this arm. On her admission it was observed that the left pectoral muscles and the breast, as well as the muscles of the left arm, were less developed. Other symptoms were pain in the head and on the left side of the neck, formication on the chest, the left shoulder, and arm, extending to the left lower extremity. There were occasionally constrictions in the throat, with flushings of the face. These symptoms continued, and at intervals of a few

days they increased in intensity. There was great prostration of strength; the face was more flushed, especially on the left side; there was amblyopia, with mydriasis, both more strongly marked on the left side. In the progressive advance of these symptoms it was observed that the formication passed slowly into pain, the pain into numbness, and this again was followed by contractions of the muscles and paralysis.

In two months and a half after her admission, she had thus lost sensation in the left half of her body. At the beginning of the fourth month the patient passed into a state of almost continuous stupor, and at this time slight delirium appeared, which rapidly increased in intensity. This symptom, with the stupor, went on increasing, the delirium being complicated with hallucinations. There was a difficulty in speaking, which passed into complete and continuous aphasia. In the early part of May there were strabismus with a divergence of the eye to the left, and incontinence of urine. On the 10th of May there was fever, with bedsores; and the delirium was at times of a furious kind. Diarrhoea and fever with a high temperature, 105° to 107°, set in, and the patient died, after a long agony, on June 2nd, four months and a week after her admission.

*Post mortem appearances.*—The left hemisphere of the brain, and the left lobe of the cerebellum were not so firm as usual. On the upper and middle portion of the right lobe anteriorly, there were numerous tubercular deposits covering an irregular surface of about 25 square centimetres (corresponding to about four square inches), and in size they varied from that of a vetch seed to a French bean. In depth they extended a centimetre, or about four-tenths of an inch, into the cortical substance of the brain. In the posterior cornu of the same hemisphere there were similar tubercular deposits, but they were few in number and more isolated. The pons Varolii and medulla oblongata presented here and there some hardened patches, owing to recent morbid changes in the membranes. On the pleura and pericardium there were numerous recent tubercular deposits of a miliary kind. These extended to the apex of the left lung. There were also tubercles on the mesentery, and others in a state of ulceration on the mucous membrane of the intestines.

With this description Professor Burresi passes to various theoretical deductions, by which he connects the symptoms with the seat of morbid changes in the brain.

[In comparing this clear case of death from tubercular disease of the brain with that which has recently much excited public attention in reference to the Penge convicts, there are, it will be perceived, some striking differences. The nature of the disease in Professor Burresi's patient was exceedingly well marked. The tubercles were not doubtful nor of small extent, but fully developed, and covering a large surface of the hemisphere of the brain, as well as extending to a perceptible depth into the cortical substance. They were found in one of the cornua, and were also present in the pleura, pericardium, and mucous membrane of the intestines. The patient was under clinical observation from the end of January to the beginning of June. The *post mortem* inspection appears to have been carefully made by a clinical professor; and although the cause of death is accurately traced to tuberculosis, we do not find any description of an emaciated body or of any appearance which could lead a medical man to suppose that death had taken place by starvation.



So again there is wanting that rapid fatality which has been assigned to this disease, even when in an early stage. Here the patient was four months under observation before the case proved fatal, yet we find no record of the wasting of the body, the shrinking of all the soft organs, and the entire absence of fat. All that is set down as worthy of notice in this respect is that the muscles of the left arm and breast were less developed than those of the right. There was decided paralysis, showing itself progressively, and stupor with delirium was a prominent symptom for some time before death. Both pupils were in a state of dilatation, the left rather more than the right.—*Rep.*

A. S. TAYLOR, M.D.

VON PLATEN ON FATTY DEGENERATION OF THE RENAL EPITHELIUM.—Dr. Otto von Platen (*Virchow's Archiv*, September 1877) has endeavoured to define experimentally the conditions under which the renal epithelium undergoes fatty degeneration. Manasséin has pointed out that inanition has this effect, but the conditions are here too complicated; so also in poisoning by phosphorus. Zielonko, by constricting the ascending aorta, induced this change, but it is evident that it is desirable to operate more directly upon the organs in question. Buchwald and Litten saw fatty degeneration of the renal epithelium follow ligation of the renal veins. Weissgerber and Perls got unsatisfactory results from the same method of investigation, as the organs became blocked up with coagulated blood. By partial obstruction to the venous current, the renal epithelium showed very ill-defined changes, consisting of some cloudiness and swelling. Platen, however, by passing a ligature round the renal artery and partially occluding its lumen, succeeded in producing distinct fatty degeneration. He experimented on rabbits, and publishes four examples. He considers the effect to result from the partial anæmia of the organ. Cohnheim has asserted, as the result of experiment, that stasis of the blood-current in a branch of the renal artery causes not fatty degeneration but necrosis, and quotes also a case of renal embolism observed in man. Platen found that ligation of a branch of the renal artery in a rabbit caused death of a circumscribed portion of the kidney, with fatty degeneration of the epithelium of the tubules in the periphery of the necrosed part, the remainder of the organ being healthy. Recklinghausen has found fatty degeneration in a case of thrombosis of a branch of the renal artery. In one of Platen's experiments, thrombosis of a branch occurred accidentally, and he found *necrosis* of the epithelium, but fatty degeneration of the interstitial tissue and the coats of the arteries. Beckman found fatty degeneration of the stroma in a case of hæmorrhagic infarct of the kidney. Platen thinks that these differences may be due to the size of the infarct, in his case both cortical and medullary substance being affected. He remarks that ligation and embolism are not quite the same thing, the latter often permitting a certain amount of circulation to go on.

ROBERT SAUNDBY, M.D.

WETTERGREN ON A CASE OF MULTIPLE CANCER IN INTERNAL ORGANS.—Wettergren relates (*Hygiea*, 1877, and *Nordiskt Medicinskt Arkiv*, Band ix, Häft 3) the case of a woman aged 61, formerly of strong build and good general health, who during fifteen years had a pain in the left hypochondrium. In 1861 a tumour of the size of a hazel-nut, of malignant

nature, was extirpated from the left breast. In 1872 symptoms of progressive muscular atrophy set in. In 1875 she had pain in the right trigeminus nerve, and in the whole of the left leg, gradually followed by deafness of the right ear, pain in the right arm, vomiting, and great depression. She afterwards also had giddiness, severe deep-seated headache, and painful anæsthesia in the region of the right trifacial nerve; her speech became indistinct, and there sometimes was slight strabismus. The right eye became affected with atonic ulcerative keratitis, which went on to perforation. She died on January 3, 1877.

The middle frontal lobe of the right cerebral hemisphere contained a cancerous mass of the size of a Spanish nut, undergoing disintegration; and the right crus cerebri and the posterior inferior lobe of the right hemisphere of the cerebellum contained several smaller masses of similar nature. A degeneration of the same kind was also seen in the right and left cerebellar fossæ of the occipital bone. In the apex of the right lung was a cancerous mass as large as a pigeon's egg; and in the left lung, and on its pleura, were a great number of similar masses as large as peas. The viscera and pericardium were studded here and there with cancerous masses varying in size from a hempseed to a pea. The mammary tumour removed in 1861 may be regarded as the starting-point of the infection.

KEY ON SYPHILITIC DISEASE OF THE KIDNEYS AND HEART.—Dr. Axel Key relates in the *Hygiea*, 1877 (abstract in *Nordiskt Medicin. Arkiv*, Band ix, Häft 3) two cases of syphiloma of the kidneys, and one of syphilitic disease of the kidneys and heart.

The subject of the first case was a prostitute, who died suddenly. At the necropsy, besides other characteristic specific changes, one half of each kidney was found to be the seat of between twenty and thirty greyish white or reddish grey round masses of various sizes, some isolated, some becoming confluent. They were surrounded by a gelatinous grey white zone, and sharply defined from the surrounding renal tissue, so far as could be seen with the naked eye. The condition could not be judged with certainty, as cadaveric changes had already commenced. Most of the larger masses had undergone caseous degeneration in the centre. Microscopic examination showed the changes usual in syphiloma, especially syphiloma of the liver, which the masses found in the kidney also resembled microscopically.

In the second case, that of a man aged 31, the syphilitic deposits were very numerous, and were principally found in the pyramids of the kidneys. (In the former case the new growths were partly within and partly without the cortex and pyramids.) They were softer than in the other case, and were in general in a state of softening, having a jelly-like consistence. In addition to the syphiloma, the renal tissue was the seat of induration and atrophy.

In connection with these cases, Dr. Key describes the condition of the heart and kidneys as found by Professor Bruzelius at the necropsy of a sailor who had died suddenly. The lower part of each kidney was found to be completely atrophied, and to be sharply marked off from the upper part, which microscopically appeared to be unaffected. This atrophy is characteristic of syphilis. The muscular tissue of the heart also contained many connective tissue growths, in which were found small greyish white or grey yellow syphilitic deposits.

**PAGANUZZI ON A CASE OF INVERSION OF THE HEART.**—In the *Giornale Veneto di Scienze Mediche* for July, Dr. Luigi Paganuzzi publishes a case in which the position of the heart was reversed. The anomaly was found in the body of an individual who had died of cancer of the œsophagus. The heart was of normal form, but the right compartment occupied the position of the left. The aorta had its origin from the right ventricle, the pulmonary artery from the left; the four pulmonary veins opened into the right auricle, and the two venæ cavæ into the left. The right (aortic) ventricle was about twelve millimetres (nearly half an inch) in thickness, the left was only half as thick. The mitral valve was on the right, the tricuspid on the left; in fine, all the special arrangements of the muscular papillæ, of the auriculo-ventricular orifices, of the openings of the veins into the auricles, and of the valves, were completely reversed. Dr. Paganuzzi remarks that the inversion could not have been more complete. The individual was an adult, and had never suffered from any inconvenience which could lead to a suspicion of the malformation.

A. HENRY, M.D.

**AUFRECHT ON GIANT-CELLS IN IVORY PEGS USED IN THE TREATMENT OF FALSE JOINTS.**—In a communication to the *Centralblatt für die Medicinischen Wissenschaften* for June 30, Dr. E. Aufrecht, of Magdeburg, states that in March last he received three ivory pegs that had been used in the treatment of a pseudarthrosis of the leg in a man aged 28. The pegs, when driven into the bone, were each 1.4 inches in length. Microscopical examination revealed no change in the surface of the first, which had been left *in situ* a week. The second, which had been used a fortnight, presented a rather deep circular depression at the junction of the upper and middle thirds, and thence to the point it was rough, as if eroded. The circular depression was half filled with a greyish white mass of tissue. Of the third peg, which had been *in situ* three weeks, a piece half an inch long was removed, being easily broken off from the portion left in the bone. The fractured end was eroded. On microscopic examination, the most perfect giant-cells were found in the circular depression on the second peg and on the surface of the peg, thence to the point, and also on the fractured end of the third peg. The cells lay singly or in groups, in lacunæ that had a remarkable resemblance to the spaces met with in the ossifying limit between cartilage and bone. At the under part of the second peg, smaller and shallower depressions were here and there found, which had the general appearance and size of bone-corpuscles, except that the processes extending from them were less numerous. No cellular bodies were found in these depressions, perhaps because attention was not called to them until long after the peg had been received. Dr. Aufrecht regarded the depressions as the first effects of the process of resorption.

From his previous studies on giant-cells in miliary tubercles, and the results of the examination of these pegs, he believes himself justified in drawing the following conclusions.

1. The giant-cell originates exclusively by the confluence of the protoplasm of the cells called fibroblasts by Ziegler, *i.e.*, of the round, oval, spindle-shaped, or stellate cells, with sharply defined, usually oval nuclei, and one or more nucleoli, from which, under other circumstances in pathological connective tissue growths, the connective tissue fibres are developed. The number of nuclei in the giant-cells is not greater

than the number of nuclei contained in the original fibroblasts. He has never been able to find any evidence of an endogenous proliferation of nuclei in the giant-cell.

2. The giant-cell is met with where there is some obstacle to the change of the fibroblasts into connective tissue, or where the capacity of the cell for this new development is lessened. The giant-cell that is developed in the neighbourhood of foreign bodies, the irritation of which is not sufficient to excite suppuration, is an instance of the former; the giant-cell of sarcoma of the latter.

3. The giant-cell furnishes, in common with other cells, the power of bringing about resorption of bone, as it brought about the destruction of the ivory pegs in the above-mentioned case. It is probable, as Flesch believes, that an accumulation of carbonic acid accompanies the formation of giant-cells. Rindfleisch has expressed the opinion, with regard to osteomalacia, that carbonic acid is capable of dissolving the lime-salts of bone. Now Tillmanns has proved that carbonic acid will dissolve the lime-salts of ivory, and hence the resorption of the organic substance would be the task set for the giant-cell.

4. The club-shaped, closed ends of newly formed vessels, which are formed by the union of cells, that are identical with fibroblasts, may be mistaken for giant-cells, when their connection with the vascular system is concealed by overlying connective tissue, etc.

#### RECENT PAPERS.

- Critical Study on the Pathogeny of Sudden Death in Typhoid Fever. By Dr. Henri Huchard. (*L'Union Médicale*, September 25 *et seq.*)  
 Researches on the Causal Conditions of Cretaceous Degeneration of the Arteries. By M. Gubler. (*Bulletin de la Société de Médecine Publique*, No. 1, June and July 1877.)  
 The Penge Case. By R. Virchow. (*Berliner Klin. Wochenschrift*, October 29.)  
 On Extrapericardial Adhesions. By F. Riegel. (*Ibid.*, November 5.)  
 On Changes in the Cartilages in Chronic Arthritis. By Dr. E. Ziegler. (*Allgemeine Wiener Med. Zeitung*, October 16.)  
 The Differential Diagnosis between Syphilitic and Non-Syphilitic New Growths. By Dr. Vajda. (*Ibid.*, October 9 and 23.)  
 A Case of Cerebral Tumour. By Dr. R. F. Bentz. (*Ibid.*, October 30.)  
 On the Atheromatous Process in the Aorta. By Dr. Löwenfeld. (*Wiener Medizin. Wochenschrift*, October 13 and 20.)  
 On Cerebral Syphilis; and especially on Syphilitic Lesions of the Cerebral Arteries. By Dr. C. Pellizzari. (*Lo Sperimentale*, October.)  
 The Pathogeny of Albuminuria. By Dr. J. W. Runeberg. (*Nordiskt Medicinskt Arkiv*, Band IX.)  
 Occlusion and Dilatation of Lymph-Channels. By Dr. S. C. Busey. (*New Orleans Medical and Surgical Journal*, September and October.)  
 A Congenital Malformation of the Lower End of the Spinal Column. By Dr. Ponfick. (*Berliner Klin. Wochenschrift*, November 12.)  
 On the Condition of the Marrow of Bones in Progressive Pernicious Anæmia. By Dr. Neumann. (*Ibid.*, November 19.)

#### MEDICINE.

**FLINT ON ANGINA PECTORIS.**—In a series of lectures on diseases of the heart in course of publication in the *New York Medical Record*, Dr. Austin Flint thus speaks of angina pectoris (Lecture iv, Sept. 29):—

This affection rarely occurs, with characteristic features, independently of cardiac lesions; but, although commonly referred to the aortic orifice, they are not invariably found in that situation. Angina pectoris is a neuralgic affection, characterised in a typical case by extreme pain, which the patient refers to the præcordia as the point of departure, and from that point extending to the left shoulder more frequently often extending down the left arm, sometimes no farther than the elbow, at other times to the forearm and fingers; in occasional cases extend-



ing to the right shoulder and extremity, and in rare cases extending to all the extremities, accompanied with great disturbance of the heart's action in the way of increased frequency and irregularity, and a feeling, which is experienced in an intense degree, of impending death.

When associated with certain lesions, it always involves more or less danger of sudden death; and yet, patients may suffer from this affection for months and years without the occurrence of such a result. There is liability to error in the diagnosis, as it is not uncommon for patients of both sexes—more especially the female sex, to experience more or less pain referable to the præcordia. These pains generally depend upon intercostal neuralgia, and to determine that it is not the pain of angina pectoris, but that of intercostal neuralgia, it is only necessary to direct attention to the diagnostic criteria of the latter affection. In the intercostal neuralgia we find the three points of tenderness, or at least two out of the three: we find usually that these patients are anæmic; frequently it will be found that they have had intermittent fever, or, more often, that they are affected with pneumonic phthisis. Intercostal neuralgia is a quite frequent concomitant of the latter affection. The pain of intercostal neuralgia is not intense, usually, and it is confined to the præcordia or its immediate neighbourhood; that is, it does not extend to the shoulder or down the arm, and is not accompanied with that feeling of impending dissolution which characterises angina pectoris. Moreover, it is not uncommon for patients to complain of a certain amount of pain in the shoulder extending down the arm and producing symptoms somewhat like those of angina pectoris; but it is not sufficiently intense, and does not give rise to disturbed action of the heart and a sense of impending death. A physical examination of the heart renders valuable assistance in solving these cases.

In addition, there are cases in which the features of angina pectoris are more or less marked without any evidence of disease of the heart. Formerly, I regarded this class of cases, those in which the symptoms resembled those of angina pectoris, and yet were not attended by any evidence, either by physical signs or symptomatic phenomena of disease of the heart, as cases of pseudo-angina pectoris. But in a certain number of cases well-marked symptoms of angina are present independently of any recognisable cardiac lesion. This is an important consideration in connection with the question of prognosis. If there be coexistent disease of the heart, the prognosis is less favourable. What are the circumstances which render this danger of sudden death greater or less? How are we to appreciate the amount of liability to sudden death? There is no absolute freedom from danger, although we have evidence that the disease of the heart is not in itself at all serious. Formerly, when I saw a patient suffering from symptoms of angina pectoris, and these symptoms were associated with physical signs of slight valvular lesion of the heart, I gave the opinion that there was no danger of sudden death. I have, however, been led to modify that opinion somewhat; still, the danger of sudden death, under these circumstances, is comparatively small.

On the other hand, the danger of sudden death in angina pectoris is great in proportion as there is advanced disease of the heart; free aortic regurgitation and dilatation of the heart, with fatty degeneration. Has the patient organic disease of the heart? If so, what, and how important is such organic dis-

ease? Has he free regurgitation at the aortic orifice; is there much enlargement with dilatation, and are there any evidences of fatty degeneration? When we are obliged to answer these questions in the affirmative, there is great danger of sudden death in connection with angina pectoris. A patient may, however, pass safely through many paroxysms under these circumstances, before the fatal one is reached. It is not the neuralgic affection itself which destroys life, but it is the associated disturbance of the heart's action that is the important cause of death. If the heart beat regularly, the patient is probably, for the time being, safe. The danger of sudden death in connection with angina pectoris is in proportion as there is feebleness and irregularity in the action of the heart. I suppose the cause of death to be weakening of the heart's action so that the left ventricle becomes over-filled, which, of course, is most likely to occur with free aortic regurgitation, and the heart is unable to relieve itself by the contraction of the ventricular wall.

We may explain, perhaps, the sudden death which occurs in cases of angina in which there is no disease of the heart present, or in which the disease of the heart itself is not sufficient to explain the death, by supposing that in connection with this neuralgic affection there is an influence transmitted to the organ, similar to the galvanic current, through the *par vagum*, which has the power to arrest its action.

Persons may present well-marked symptoms of angina pectoris, without evidence of disease of the heart, and may also recover from the liability to it. I have met with a few instances of this character.

As regards treatment, it resolves itself into measures which may be employed for the immediate arrest of the paroxysm, and those which are indicated by the coexistent disease of the heart; the object being to place the general system in the most favourable condition, so that the paroxysms will be likely to be recovered from, and not prove fatal.

With regard to the paroxysm, the indication is to give more or less freely of stimulants, either alcoholic or ethereal. Of the ethereal preparations, Hoffman's anodyne may be given freely. Alcohol may be administered in the form of spirit and not much diluted, the object being to produce a prompt and distinct impression. In this manner the patient is carried over the paroxysm. A few drops of laudanum, or of the paregoric elixir, may perhaps be added to the stimulant with advantage.

We have a remedy which is certainly of great value as possessing the power to arrest the paroxysm very promptly, and that is the nitrite of amyl by inhalation. I have in repeated instances prescribed this remedy, and I know of one patient who had suffered severely from attacks of angina, not passing a day without one and sometimes several, paroxysms, who was able to arrest them so promptly by the inhalation of a few drops of the nitrite of amyl that the affection became quite tolerable.

As regards the second indication, it is essentially that which belongs to the treatment of valvular lesions and enlargement of the heart.

WOOD ON THE TRIGEMINAL NEURALGIAS.—In a clinical lecture, published in the *New York Medical Herald* for October 27, Dr. H. C. Wood, junior, Clinical Professor of Nervous Diseases in the University of Pennsylvania, divides neuralgias into two great classes, each class composed of several varieties. In the first class are all these forms of neuralgia in which the paroxysms of pain come on regu-

debility were treated in all cases by suckling alone, without any medicines.

**MÜLLER ON RANULA IN NEW-BORN CHILDREN.**—In a paper read before the Moscow Medical Society and published in the *Moscow Medical Gazette* (abstract in *Central-Zeitung für Kinderheilkunde*, November 1), Dr. N. Müller makes some observations on the occurrence of ranula in the newly born. The affection is so rare that its existence has been denied. Four cases have been recorded by Dubois, Bertin, Lombard, and Bland, and four others by Bryant. In the foundling hospital at Moscow, four or five cases of congenital ranula have been observed during the last seven years in about 80,000 children. Of these, Dr. Müller describes three. In a boy seven days old, a ranula as large as a pigeon's egg was found lying to the left of the *frænum linguæ*; in a girl three weeks old the swelling lay on both sides of the *frænum*, and attained the size of a large walnut before the end of the second month; and in a boy three days old there was a pyriform ranula, with the small end directed forwards, lying to the left of the *frænum*. The last case was apparently one of retention-cyst from obstruction of the orifice of Wharton's duct. In the first two cases the tongue was pushed upwards, and sucking was impeded. Puncture with a needle gave exit to a clear sero-mucous or (in the third case) watery discharge; the swelling then collapsed, but in a few days regained its original size. In the first case, tincture of iodine was injected; this produced suppuration, followed by cure of the ranula in three weeks. In the third case, the sac of the tumour, after having refilled, was cut away with scissors, with a successful result. In the second case incision was avoided, on account of the vascularity of the swelling, but a ligature was applied over it. The swelling did not disappear, but only became smaller. At the end of a fortnight, no change having taken place in the size of the swelling, and there being scarcely any discharge from the punctured joints, the ligature was removed. The ranula was still as large as a pigeon's egg, hard, and without fluctuation. An attempt to remove the contents by means of Pravaz's syringe was unsuccessful, as was also painting with tincture of iodine. Towards the end of the fourth month the child died of chronic enteritis. At the *post mortem* examination there was found a cavernous cystic tumour as large as a pigeon's egg, the cavities of which were filled with a clear transparent fluid. The sublingual salivary glands were normal.

**LETZERICH ON A NEW FORM OF MYCOSIS (ÆSOPHAGI).**—In the *Archiv für Experimentelle Path. und Physiol.* (quoted in *Med.-Chir. Centralblatt*, No. 32, 1877), Dr. E. Letzerich describes the case of a child sixteen months old who suffered from difficulty of deglutition, irritation, dyspepsia, and distension of the stomach, and who vomited muco-purulent masses, which were found to contain flattened epithelium, covered with peculiar microscopic fungi. An examination of the paper hung on the walls of the room revealed the cause of the child's illness. It was moist, had a fine powdery deposit on it, and presented numerous defects. In creeping along the wall, the child had pulled off small pieces and swallowed them. Dr. Letzerich found, on microscopic examination, that the fungi of the paper were identical with those in the vomited matter. The presence of these organisms explained the æsophageal and gastric symptoms. The treatment consisted in the administration of salicylate of soda in

barley-water, under which, in eleven days, the patient recovered.  
A. HENRY, M.D.

**ROWAN ON A CASE OF IMPERFORATE ANUS WITH FISTULOUS OPENING INTO THE BLADDER.**—The following case is recorded in the *Australian Medical Journal*, March 1877. On April 11th, 1876, a male child, two days old, was brought to Mr. Rowan, at the Melbourne Lying-in Hospital. On examination, an imperforate condition of the anus was found; there was no depression or mark to indicate its usual position. The abdomen was distended, tympanitic, and very tender. On the next day chloroform was administered, and an incision was made in the centre of the fundament; and, after cautiously dissecting to a depth of two and a half inches, the rectum was reached. An opening was made into it, and a large quantity of meconium and flatus escaped. The wound was kept open for a week with oiled lint, and a large bougie was subsequently passed every second or third day. Mr. Rowan shortly afterwards lost sight of the child, but it was brought back to him on the first of last February, in a worse condition than in the preceding April. The bougie had not been passed for three months, and for two months the child had passed nothing by the natural passage, all the motions escaping through the penis until the previous day, when the foreskin became so narrow that the child could not pass even urine without great difficulty. Examination showed that the anus was closed about an inch from the orifice, and revealed in addition complete phimosis. Circumcision was performed, and a few days later the former passage into the rectum was reopened and enlarged sufficiently to allow the finger to be passed in. The rectum was found filled with hard *fæces*, which did not come away until the next day. After the operation, the finger was passed every day, and at the present time the canal seems perfect. Mr. Rowan thinks that a second operation would not have been required in this case, if he had made the opening large enough at first to allow the finger to be inserted easily. The fact that defecation occurred through the bladder and penis for two months, without causing cystitis or urethritis, is curious.

## MATERIA MEDICA AND THERAPEUTICS.

**SQUIBB ON THE ADMINISTRATION OF PHOSPHORUS.**—In a report from the *Proceedings of the American Pharmaceutical Association* for 1876, Dr. E. R. Squibb contributes some valuable practical information on the administration of phosphorus, which is summarised by Dr. W. G. Smith in the *Dublin Journal of Medical Science* for October.

It must now be admitted that phosphorus, in its separate and elementary condition, produces effects upon the animal economy which are not only different in degree, but also different in kind from the effects of phosphoric acid or any oxides of phosphorus. If the evidence for this statement does not yet amount to a demonstration, it is still entirely sufficient to justify the admission, and much too strong to be disregarded.

Phosphorus should be used with great caution, but not with timidity; and those who are afraid of it should let it alone rather than add to the large stock of so-called experience which has accumulated from imperfectly observed phenomena in its timid and



unskillful application. It is dangerous only in the sense that all potent agencies are dangerous, because power to do good involves necessarily the same power for harm. The important peculiarity in regard to phosphorus, however, is that its poisonous effects from medicinal doses are remote, slow, and insidious; and when allowed to go to an extent which does not appear very grave, the condition is irremediable. It is, except in small doses, cumulative in its action; and as for some uses it is given in increasing quantities, it should be suspended for a few days at the end of ten or twelve days, and then be resumed in smaller doses and increased as at first with the same watchful care. At the very first appearance of the slightest gastric derangement, such as gastralgia, vomiting, or diarrhoea, it should be suspended, and be either abandoned or resumed in smaller doses with increased watchfulness. The necessity for care is in proportion to the dose. From  $\frac{1}{100}$ th to  $\frac{1}{50}$ th of a grain three or four times in the twenty-four hours may be given for weeks and months even, without any extraordinary care; and although such are the doses most frequently required and used, they are not large enough for some of its uses. Doses as large as  $\frac{1}{8}$ th of a grain have often been reached, but  $\frac{1}{12}$ th is considered to be about the largest safe dose, whilst  $\frac{1}{30}$ th to  $\frac{1}{20}$ th of a grain need rarely be exceeded in the most active treatment to which phosphorus is applicable. These doses apply to the substance when in solution in cod-liver oil, where it is in its most effective and most uniform condition for use. When used in the solid form, however finely divided, or however combined, much larger doses are generally tolerated, but explosion in the effects is much more liable.

From all that has been written upon the subject, it seems to be pretty well established that phosphorus should only be given in solution, and that the solution used should be bland and not volatile, and should be capable of protecting the substance from oxidation for a reasonable length of time, when kept from light and air. Such a solvent has been found in cod-liver oil; and the testimony in regard to the solution in cod-liver oil is, up to this time, so favourable as to indicate that all other preparations should be abandoned. It is the object of Dr. Squibb's paper to show that a definite uniform solution of phosphorus in cod-liver oil may be easily made and easily managed, so as to offer conditions for accurate administration and accurate observation. Dr. Squibb prepares a 1 per cent. solution of well-dried phosphorus in cod-liver oil; but for the manifold precautions to be observed in manipulation, we must refer to the original. This solution of phosphorus has the sensible properties of the cod-liver oil from which it is made, except that a slight odour of phosphorus is superadded, and the oil should be as limpid and as bland as possible, and must be entirely free from rancidity. When exposed to the air it emits white vapour in small amount, and becomes covered with a dark brown pellicle, which protects the oil below it from rapid change. No part of the pellicle should ever be dispensed, nor should the last half drachm of the vial be used. The dose should be calculated always by weight. Each minim weighs 0.88 grain, and, therefore, represents 0.0088 grain of phosphorus.

For the administration of small doses of this metalloïd, the phosphorised oil may be further definitely diluted with cod-liver oil, or diffused in a cod-liver oil emulsion, or prescribed in capsules.

NASSE ON THE INFLUENCE OF IRON MIXED WITH FOOD ON THE BLOOD.—Nasse (*Marburg. Sitzungsbericht*, No. 3, 1877) fed a dog weighing about 17½ pounds, during eighty-seven days, with bread and potatoes; giving at the same time, for twenty-five days, 15½ grains of lactate of iron daily, and for the remaining sixty-two days 18½ grains of oxide of iron each day; the dose in each case being mixed with about six-sevenths of an ounce of fat. The weight of the animal increased by more than two pounds. The specific gravity of the blood rose from 1052 to 1060.8; that of the serum remained nearly unchanged. The amount of iron in the blood increased from 0.477 per mille to 0.755. In seven other dogs, out of eight subjected to experiment, feeding with various preparations of iron was followed by an increase of the solid constituents and of the specific gravity of the blood; the latter being 3.02 higher than before, indicating an addition of 7.6 per mille to the former. The increase of the solid constituents depended solely on that of the blood-corpuscles. The amount of iron in the blood rose regularly. In conclusion, the author expresses his belief that the administration of iron mixed with fat is productive of the most fruitful results; and he recommends the use of fat food containing iron for anæmic patients.

WRIGHT ON GRINDELIA ROBUSTA IN ASTHMA.—In the course of the discussion of a paper by Dr. Bartholow on this remedy, Dr. C. O. Wright reported (*Ohio Clinic*, October 13) a case of asthma of fifteen years' duration, in which the patient had not been free from an attack for a single day. She had tried every remedy that had been suggested, but in vain. About a month ago he was called to see her. He had with him some pills of grindelia robusta, and determined to give them a trial in this case. He ordered the patient to take a two-grain pill three times a day. During the next three weeks in which she continued the use of the medicine, she had not a symptom of asthma. At the end of the third week, she had a severe attack of diarrhoea. Her motions were entirely involuntary, occurring without warning. She became greatly reduced. At this time she discontinued the medicine, thinking it had something to do with the diarrhoea. Before taking the medicine, the patient complained of a sense of great dryness of the lungs and air-passages. After taking the remedy there was a profuse discharge from the lungs, with entire relief from the unpleasant sensation. On two occasions there was suppression of the urine.

VIGOUROUX ON THE HYPNOTIC USE OF GALVANISM.—Dr. Vigouroux (*Journal des Connaissances Médicales*, May 15) remarks that, while the general sedative action of the galvanic current is sufficiently known, yet the special hypnotic effect of galvanisation of the head is not less real, although it appears to have been completely neglected, at least in France. The process consists simply in passing the current from 3 to 5 Trouvé cells through flat electrodes placed on the temples for 30 seconds to 1 minute. The electrodes may be applied to other points of the cranium, but the bi-temporal position appears to be the most efficacious. If the application be made in the morning, the patient experiences for the rest of the day a more or less pronounced tendency to sleep. The author has verified this action of the galvanic current more than fifty times, mostly on patients under the care of Professor Charcot, and urges in its favour its almost constant success in the diverse

forms of insomnia, its almost perfect harmlessness, and the avoidance of any digestive disturbance such as is liable to follow the use of hypnotic drugs. Dr. Vigouroux has also met with success in the treatment of nervous buzzings in the ear and auditory vertigo by means of a constant current.

**THOMSON ON THE ANTISEPTIC TREATMENT OF SCARLET FEVER.**—In a discussion on this subject, at the New York Academy of Medicine (reported in the *New York Med. Record* of August 4), Dr. Thomson said that, so far as general treatment of scarlet fever was concerned, he placed first and foremost among the indications the internal use of antiseptics belonging to the chlorine class—his own preference being for the bromine, having formerly employed chlorine. The manner of using the bromine was as follows. Dr. J. Lawrence Smith's solution was employed, consisting first of a saturated solution of bromide of potassium in water, and to two ounces of that an ounce of bromine was added very slowly, shaking the bottle constantly while making the combination. It was better to add half of the quantity of bromine first, and then let the bottle stand for an hour or more before the remainder was added. When the bromine was dissolved in that manner, the bottle was to be filled with water until a *four-ounce* mixture was made. The solution thus prepared could be again prepared for administration by combining it with water in any proportion desired. For internal administration a drachm of the solution to an ounce of water was used, and of that a teaspoonful was given in a tablespoonful of sweetened water as required. The solution should be kept in a dark place. As a local application, equal parts of the solution and of glycerine should be employed, or, in serious cases, the solution should be applied clear. The odour of diphtheria was entirely destroyed by the local application of the bromide solution.

**COGHILL ON ERGOT IN GOITRE.**—In the *Medical Times and Gazette*, Dr. J. G. S. Coghill describes a case of goitre in which, as the usual remedies had been tried in vain, and the patient had declined a surgical operation, he determined to inject a solution of ergotin hypodermically, as suggested by Hildebrandt in cases of fibro-myoma of the uterus. He used the "ergotine disks" of Messrs. Savory and Moore. In all, sixteen injections were made over the tumour, and as closely in contact with its substance as possible. He commenced with one disk, equal to one third of a grain, and increased the amount gradually to three disks. They were simply dissolved in distilled water, and injected at blood-heat. The first four injections were made daily, the next four at intervals of two days, and the others at longer intervals, the whole extending over two months.

The results were soon apparent, and were most satisfactory. The tension and dense consistence of the tumour first of all diminished rapidly, with great relief to the dyspnoea and dysphagia. The whole mass became gradually reduced in size, until the left lobe, which had always been the least, returned to its natural size, while the right and middle lobes certainly returned to half, at least, of their former dimensions. It is to be noted that, although the injections were at first, and for the most part, made over the right or larger side of the tumour, the left and central portions became much more rapidly, and to a comparatively greater extent, reduced in size. The nutrition of the entire body seems also to have been influenced to some extent by the remedy; for

although the patient was by no means obese, she lost fourteen pounds in weight during the two months, but with no loss of strength or other deterioration of health.

**LANSING ON ERGOT IN HÆMORRHOID.**—In the *Philadelphia Medical Times* of October 13, Dr. E. S. Lansing states that, having in hand an intractable case of hæmorrhoids, he used ergotin in suppositories, four grains each, night and morning at first, subsequently at night only. The first effect of the ergotin was to produce pain for half an hour or more, but, after the use of three or four suppositories, no unpleasant effect attended their use. The hæmorrhage ceased, the congested condition of the parts yielded, the hyperæsthesia was replaced by normal sensation, the hard cordy condition of the veins passed away, and the slight tumefaction remaining suggested interstitial fibrinous exudation or cellular hyperplasia. Of five cases treated with the ergot, in four the result was more satisfactory than Dr. Lansing anticipated; the fifth was still under active treatment. Having never seen the treatment suggested, and the result in his cases being so happy, he offers it that others may test it.

**YVON AND OTHERS ON PREPARATION OF ERGOTINE FOR SUBCUTANEOUS INJECTION.**—At the meeting of the *Société de Thérapeutique* in Paris, on July 11, M. Yvon showed a new preparation of ergotine intended for subcutaneous injection (*Journal de Thérapeutique*, July 25). The ergot, coarsely powdered, is first freed from the fixed oil contained in it; the powder is then placed in a displacing apparatus, and exhausted by cold water to which tartaric acid has been added; it is afterwards heated so as to coagulate the albuminoid matters; it is then filtered and left to digest with carbonate of lime. An amber-coloured liquid is thus obtained, which precipitates by the reagents of the alkaloids. M. Rocard of Alfort has verified its powerful action on the uterus by experiments on bitches. M. Moutard-Martin communicated the formula which he generally found successful for subcutaneous injections in cases of metrorrhagia; viz., Ergotine, two grammes; glycerine, fifteen grammes; water, fifteen grammes. Of this he injects from one to one-and-a-half gramme. There is no local effect; if some induration supervene, it generally disappears very quickly. In similar cases, M. Bucquoy injects internally one gramme (fifteen grains) of the following solution: Glycerine, thirty grammes; ergotine, two grammes.

**EDES ON THE COLD WATER TREATMENT OF TYPHOID FEVER.**—In an article on this subject published in the *Reports of the Boston City Hospital* for 1876, and quoted in the *American Journal of Medical Sciences* for October 1877, Dr. Robert T. Edes gives the experience of this method of treatment with the extraordinary result that "of thirty-two patients in three different years, where a clear diagnosis of typhoid fever in the first week is admissible, only one died" (italics in the original); the fatal case being due to sloughing and perforation in the sigmoid flexure. In a total of sixty-six cases entering the wards in all stages of the disease, most of which were treated by more or less bathing, eleven were fatal, the death-rate being about eighteen per cent. Such results warrant a brief consideration of the details of treatment.

"The patient is placed in a bath, near the temperature of the body, 100° for instance; then warm water is drawn off and cold added until a limit of be-



tween 80° and 70°, or less, is reached. Two or three feet of India-rubber hose, slipped upon the cold water faucet, are convenient in cooling the bath equally and avoiding the splash and noise of the running water. The patient's limbs should be rubbed by attendants, to equalize, as far as possible, the circulation, and thus promote the cooling from a large surface. At ten or fifteen or more minutes he may begin to shiver, and he should then be placed in bed and covered up. If the chill be severe, heaters may be placed to the feet, the amount of heat thus added at a distance from the trunk being small, while it greatly relieves the subjective sensations of chill. A glass of wine may also be administered, especially if, as sometimes happens, the pulse becomes small. . . . indeed, I am not sure that it would not be better to make its use the rule rather than the exception."

A temperature of 102° to 104° is taken as an indication for the baths, of which several may be administered in the course of the day; four *per diem* being not uncommon, three being given in the afternoon and evening to anticipate the high temperature, it being found by experience that a bath late in the evening often materially aids in procuring a good night's rest.

The treatment after bathing was rest, liquid diet (chiefly milk), alcohol frequently, especially towards the latter part of the disease, and a few antipyretic doses (gr. 20 to 30) of quinia were necessary. No remarks are made regarding the palliation of symptoms, but it is probable that the treatment of excessive diarrhœa, hæmorrhage, perforation, etc., is that which obtains elsewhere.

**DANJOY ON THE TREATMENT OF DIABETES BY THE BOURBOULE MINERAL WATERS.**—Dr. Danjoy has studied the action of the Bourboule mineral water on diabetes and glycosuria (*Annales de la Société d'Hydrologie*, tome xxii). The presence of chloride of sodium and arsenic in the mineral water of Bourboule seems to give promise that this water is likely to be useful in glycosuria. The physiological action of Bourboule water on the healthy subject shows that this water taken internally is not diuretic, and that it does not increase the secretion of urea. These two physiological actions have been verified in diabetic patients by clinical observation. In these patients the treatment has almost always resulted in the diminution of the polyuria and of the urea secreted. To these facts must be added the diminution of the glycosæ. Improvement has been obtained by treatment only without any special regimen. In accordance with these data, Dr. Danjoy recommends the Bourboule treatment for diabetic patients who have lost flesh, and to those in whom azoturia forms a contra-indication to the use of the alkaline treatment.

**VAN BIBBER ON COMPRESSION AS A THERAPEUTIC AGENT.**—Dr. W. C. Van Bibber (*Maryland Transactions*, quoted in the *American Journal of the Medical Sciences* for October) notes the great but unappreciated value of pressure or compression as a therapeutic agent. Inordinate deposit of fat in the legs he has seen removed by the daily use of a roller bandage. A large chronic abdominal tumour, accompanied with great quantities of pus in the urine, was recovered from, under careful and systematic compression, and the removal of constriction by corsets higher up. Even abdominal tumours simulating cancerous growths have yielded to gentle but persistent pressure. The diarrhœa of debility

has been often relieved by the same means. A more heroic treatment was once successfully employed, "grasping the bowels by a strong hand, and holding them steadily for forty-eight hours". The case was one of persistent diarrhœa in a feeble girl, which seemed likely to prove fatal. While this last instance seems rather extravagant, Dr. Van Bibber is right in attaching considerable importance to mechanical support and pressure in many medical cases as well as surgical.

**EUTYBOULE ON THE TREATMENT OF CANCER BY CHLORATE OF POTASH.**—Demetrius Eutyboulé (*Thèse de Paris*, March 1877) first recalls to mind the results obtained by Tedeschi (1846), Milson (1837), Weeden Cooke (1867) Leblanc and Bergeron (1866), Boscher (1867) Féréol (1868), Magni, of Bologna (1868), Burrow (1873), and Vidal (1875), and shows the useful results which may be obtained from the employment of chlorate of potash in the treatment of cancers. He records a large number of cases in support of this view. He uses chlorate of potash both internally and externally; internally in doses of from 45 to 60 grains in a draught, externally in a saturated solution of 7 to 70 parts per cent., which should be used as a permanent application. When the cancer is not ulcerated, M. Bergeron advises that caustic should be applied before the chlorate of potash; or, according to Vidal, the latter should be used in the form of powder, the raised edges of the ulcer should be destroyed, and the bottom of it made level.

**TREATMENT OF GRAVES'S DISEASE.**—In notes of medical treatment at the Hospital of the University of Pennsylvania (*Philadelphia Medical Times*, October 13) it is remarked that, in the treatment of Graves's disease, or exophthalmic goitre, the greatest care must be given to the removal of the causes, and in securing rest, good food, change of scene, and entire release from care. The various functions must be attended to, and any local disorder in females removed by suitable treatment. Digitalis is the most valuable remedy for controlling the functional disturbance of the heart. It may be given freely in doses of from ten to fifteen drops, three or four times a day, and continued for long periods. When anæmia exists, large doses of iron must be administered. Most excellent results have been obtained from the injection of diluted solutions of ergot into the enlarged thyroid gland. The needle may be introduced to the depth of half an inch or an inch, and from six to ten minims of a solution containing ninety-six grains of ergotin to the fluid-ounce of distilled water injected. Bromide of potassium is valuable in assisting the iron and ergot in controlling the irregular action of the heart and arteries.

**TREATMENT OF TETANUS.**—At the Hospital of the University of Pennsylvania (*Philadelphia Medical Times*, October 13) systematic feeding of patients with liquid and strengthening food at short intervals has been employed with very good results. The food must be given at intervals of every two or three hours, and should consist mainly of milk, with a small quantity of alcohol. In severe cases, all solid food must be avoided. As for medicines, the patient must be brought well under the influence of the bromide of potassium by an initial dose of two drachms to half an ounce, to be followed by half a drachm to a drachm every three or four hours. To force sleep at night, give at bedtime thirty grains of chloral with some opium. Chloral also may be used, when neces-

sary, in daytime. Nitrite of amyl and chloroform should not be used steadily, but may be employed from time to time to stop violent spasms. If bromism be produced, chloral and opium should be relied on, or cannabis indica may be substituted for the bromides. Where there is much cerebral congestion, a blister is put on the nape of the neck.

**TREATMENT OF CHRONIC ARTICULAR RHEUMATISM.**—At the Hospital of the University of Pennsylvania (*Philadelphia Medical Times*, October 13) the most successful mode of treatment has been by manipulation of the ankylosed joints, and counter-irritation applied to the nerve-trunk higher up the leg. The continued current with the positive pole placed over the point of tenderness, and the negative pole higher up the nerve, may also be employed. When the foot is affected, a shoe should be constructed which shall take the strain off the painful joint and throw the weight of the body on the outside of the foot (this for rheumatism of the joints of the foot, of course). Where there is a decided rheumatic diathesis, the persistent use of the following prescription is followed by advantageous effects :

R Pulveris guaiaci resinae, gr. x; potassii iodidi, gr. x; tinct. colchici semin., f ʒ ss; aquæ simmomi, syrapi, aa q. s. ad fʒi. M. Sig.—A dessertspoonful to a tablespoonful thrice daily.

**TREATMENT OF LUMBAGO.**—In the notes of Pennsylvania (*Philadelphia Medical Times*, medical practice at the Hospital of the University, October 13) the following treatment is recommended. Manipulation must be applied to the lumbar region of the spine, so as to restore mobility. To subdue the painful condition of the muscle, injections of one-eighth of a grain of atropia and one-eighth of a grain of morphia, well diluted, should be made well into the body of the muscle. Great care must always be had in the administration of morphia and atropia to nursing women, as belladonna is the most powerful antilactagogue known, and too large doses of morphia often affect the child through its milk. The local application of blisters, iodine, and croton-oil, together with the internal administration of iodide of potassium, often does good.

**TREATMENT OF EPILEPSY BY BROMIDE OF ZINC.**—Experiments have been going on for some time in M. Charcot's wards at the Salpêtrière Hospital, with bromide of zinc as a remedy for epilepsy. It can be administered either in the form of pills or as a syrup. The pills contain each three-quarters of a grain of bromide of zinc. Commencing with one pill daily, the dose may be increased to twenty-five grains, increasing the quantity of bromide contained in each pill. The drug can be given in syrup according to the following formula : Bromide of zinc, fifteen grammes ; syrup of bitter orange-peel, a hundred and fifty grammes ; four, five, or six teaspoonfuls to be taken in the course of the day. The results obtained from the administration of these pills have been satisfactory.

**THE GRAVITY TREATMENT OF CHRONIC DYSENTERY.**—In the *Boston Medical and Surgical Journal* for October 25th, it is stated that there have lately been two well-marked cases of this disease in Dr. Pepper's wards. In the first case the treatment was by the late Professor Simon's proposed method, by "gravity injection". The apparatus is very simple, consisting of an ordinary funnel with an elastic tube attached, six or eight feet in length. The liquid to

be injected is poured into the funnel. The height at which the funnel should be held depends upon the amount of resistance to be overcome, and the quantity of the injection. In this case a solution of nitrate of silver, varying in strength from eight to fifteen grains to the quart of water, was introduced into the bowel. At first a pint, and later a quart of the solution was injected once or twice daily ; afterwards once in two days. The injection was retained for from five to ten minutes. Its retention gave no pain, with the exception of a slight burning sensation when the stronger solution was injected. The stools became formed and less bloody very soon after the commencement of the new treatment, and in three weeks or so the patient was entirely convalescent.

The second case refused entirely to improve under this kind of treatment, but yielded completely to a pure milk-diet. A quarter of a grain of calomel and ten grains of bismuth were given three times a day for the space of two days before beginning the pure milk-diet.

**REMEDY FOR PAIN IN CARCINOMA OF THE CERVIX UTERI.**—The *Boston Medical and Surgical Journal*, August 23, states that in cases of medullary carcinoma and progressive epithelioma of the uterus, powdered ergot in doses of thirty grains every six hours has proved very beneficial against the terrible pain ; for, as a rule, when there is an increase in the amount of blood flowing from the diseased tissue, the pain is much diminished, but in patients who are very much reduced already by the loss of blood, this treatment cannot be carried out.

Another excellent remedy is croton-chloral-hydrate. This diminishes the pain, not in the cancer, but the reflex pain in the back, thighs, and vulva. As local treatment, it is recommended to place little pieces of cotton-wool, soaked in strong carbolic acid, about the cervix and diseased tissue ; this should be done through a speculum ; then to syringe out the vagina, morning and evening, with a solution of what is called glycerine carbolic acid, thirty grains in a pint of water.

**PURJESZ ON JABORANDI IN CARDIAC AND RENAL DROPSY.**—Dr. Purjesz of Buda-Pesth sometime ago published an article in the *Berliner Klinische Wochenschrift*, in which he stated that the diaphoretic and sialagogue action of jaborandi diminished with the continued use of the drug ; and that under its use, in cases of parenchymatous nephritis, while diuresis was promoted, the amount of albumen in the urine was increased. In a subsequent paper, published in the *Deutsches Archiv für Klin. Med.*, Band xvii, he gives the results of observations on four patients under Professor Wagner's care in the University Clinic. Two had contracted kidney ; one had insufficiency of the mitral and tricuspid valves with considerable ascites. It was found that the diaphoretic action was unequal, being almost absent in one ; while the action on the salivary secretion was well marked. The diuretic action was but slight ; in both cases of the contracted kidney, the medicine had no effect on the progress of the disease, while the albumen in the urine increased from the first dose ; in the case of heart-disease, the ascites remained unaffected ; and in the case of psoriasis, the increased perspiration had no effect. In all the cases, the appetite was impaired by the medicine. The author considers that these results confirm the observations previously made by him, that jaborandi



is not a proper drug for the treatment of cardiac and renal dropsy.

**HAMBURGER ON THE ELIMINATION OF MERCURY.**—Dr. E. W. Hamburger, of Franzensbad, sums up a paper in the *Prager Medicin. Wochenschrift*, 1877, with the following conclusions. 1. Mercury can be distinctly found in the urine of patients who have been treated with mercurial suppositories for some time. In one case in which the treatment had been commenced four days previously, mercury was not found in the urine. Mercury is always present in the urine of patients who have been treated by inunction.

2. In patients treated with suppositories, mercury was always found in the milk as well as the urine. In cases of inunction, although mercury was present in the urine, none could be found in the milk; and, when mercurial inunction was substituted for suppositories, the mercury disappeared from the milk, although it continued to be present in the urine.

3. The fæces of a patient who was treated by inunction, contained a large amount of mercury. Dr. Hamburger concludes hence that the elimination of mercury takes place chiefly by the bile.

The chemical process used consisted in the removal of organic matters, the application of electrolysis, and the formation of iodide of mercury, the crystals of which were readily recognisable under the microscope.

**OTTO ON INHALATION OF SALICYLIC ACID IN WHOOPING-COUGH.**—R. Otto (*St. Petersburg. Med. Wochenschrift*, Nos. 22 and 23, 1877) believing whooping-cough to be due to the presence of a vegetable parasite, employed inhalation of a two per cent. solution of salicylic acid in an epidemic of the disease which broke out at Lisetz in Livonia, in August 1876. The treatment was applied in seven cases, and was commenced as soon as the convulsive stage appeared. The number of paroxysms was rather rapidly diminished in all the cases; the best results were observed in children who were in rooms of which the temperature was kept equal. The author says that he does not attempt to show from these few cases that this treatment is absolutely effectual in whooping-cough: he merely desires that the remedy should have a further trial.

**UNTERBERGER ON THE DIURETIC ACTION OF BLATTA ORIENTALIS IN SCARLATINAL NEPHRITIS.**—S. Unterberger (*Petersburg. Med. Wochenschrift*, 1877, No. 34) has tried, in the Nicolai Children's Hospital at St. Petersburg, the *blatta orientalis*, recommended by Bogomolow as a remedy for dropsy. It was given to children suffering from scarlatinal nephritis, in doses of about two and three-quarters to four and a-half grains three times daily. The cedema diminished, the weight of the body was decreased, the urine was increased in quantity and contained less albumen, while the kidneys and bowels were not injuriously affected.

A. HENRY, M.D.

#### RECENT PAPERS.

The Local Treatment of Diphtheria with Solid Nitrate of Silver. By Dr. P. Kaatzer. (*Berliner Klin. Wochenschrift*, November 12.)  
The Action of Condurango Bark. By Dr. Becker. (*Ibid*, November 19.)  
Remarks on Idiosyncrasy against Water Treatment. By Dr. Anjel. (*Ibid*.)  
On the Comparative Indications for Morphia and Digitalis in the Course of Organic Affections of the Heart. By M. A. Gubler. (*Journal de Thérapeutique*, November 10.)  
On the Treatment of Gout. By M. Bordier. (*Journal de Thérapeutique*, Nov. 10.)

On the Use of Sulphate of Cinchonidine in Intermittent Fevers. By Dr. E. Le Juge. (*Journal de Thérapeutique*, November 25.)  
On the Use of Albuminate of Iron in the Chlorosis and Anæmia of Women Suffering from Chronic Uterine Affections. By M. R. Choissnard. (*L'Union Médicale*, November 27.)  
On Subcutaneous Injections of Chloroform, and particularly of their Employment in the Alleviation of Pain. By Ernest Besnier. (*Bulletin Général de Thérapeutique*, November 30.)

#### OBSTETRICS AND GYNÆCOLOGY.

**GOODELL ON RUPTURE OF THE UTERUS.**—In the *American Supplement to the Obstetrical Journal of Great Britain and Ireland*, August 1877, Dr. W. Goodell, of Philadelphia, relates the following case. Mrs. O'H., aged 30, gave birth to her first child two years ago—a dead infant, delivered by forceps. On March 23, 1877, at 10 P.M., she went into labour with her second child. At 9 next morning the pains were active, and Dr. Betts arrived; found the os dilated, and ruptured the membranes. The cord at once prolapsed with the head in the right occipito-posterior position. The pains, strong at first, became feeble; she began to vomit, and became unaccountably collapsed; the face pale, the pulse thready. Dr. Betts sent for a neighbouring physician, who arrived at 2.30 P.M. An hour after his arrival, the cord being replaced, the forceps were applied; traction by both physicians was fruitless. Version was decided upon, ether administered, and a foot was brought down; but that was all. The breech would not follow. It was now 6 P.M., and Dr. Goodell was sent for. Arriving at 11 P.M., he found the patient pale and weak; no external hæmorrhage. An examination revealed a rupture of the uterus; the vagina was full of intestines: carrying his hand into the uterus, Dr. Goodell found that organ also full of intestines. The foetus was in the abdominal cavity, and could only be felt, by external palpation, to be lying under the diaphragm. The intestines so obstructed the way that Dr. Goodell did not think it safe to attempt delivery *per vaginam*. Laparotomy was decided on; but, whilst awaiting the messenger, who had gone for a bistoury, Dr. Goodell, making another examination, brought down a foot; the head did not easily follow the trunk, although suprapubic pressure was used, therefore Dr. Goodell perforated and delivered. On tracing the cord up, it was found lying near the spine, among the bowels. It was easily removed. All this time there was no bleeding. Dr. Goodell cleared some clots out of the abdomen. The patient went on well until the fourth day, when vomiting set in; the abdomen became tender and tympanitic. It was evident that septicæmia had set in. The tympanitis and peritonitis became more marked, and she died on the ninth day after her delivery. Dr. Goodell thinks that, had laparotomy been performed, the danger from the suprapubic propulsion, which was used to expel the aftercoming head before it was perforated, would have been avoided, and the patient would have had a better chance. He thinks, with Trask, that, when the child has escaped into the abdomen, all thought of delivery *per vias naturales* should be abandoned, and that laparotomy should be resorted to.

**KRONE ON THE VALUE OF SPONGE-TENTS IN OBSTETRIC AND GYNÆCOLOGICAL PRACTICE.**—Dr. Krone of Hanover relates, in the *Berliner Klinische Wochenschrift*, October 1877, several cases of placenta prævia, in which, previously to delivery, he arrested the hæmorrhage whilst dilating the os uteri with

sponge-tents. He has also employed them with success in the hæmorrhage, resulting from a partially expelled ovum. Dr. Krone does not share the common fear that sponge-tents are liable to cause septicæmia. In cases of sterility and dysmenorrhœa, depending on stenosis of the cervical canal, he dilates the contracted os uteri by means of sponge-tents. This mode of procedure has been followed by impregnation. As a proof of the harmlessness of sponge-tents, he relates a case in which, in removing a tent, he broke it, and left half in the uterus, where it remained for four months, when it was expelled, and the sterility for which it had been applied was cured.

**BAKER ON LACERATION OF THE CERVIX UTERI AS A CAUSE OF UTERINE DISEASE.**—In the *Boston Medical and Surgical Journal*, September 1877, Dr. Baker relates several cases in which he has performed Emmet's operation for lacerated cervix uteri with beneficial results. Dr. Baker points out that lacerations of the cervix are a common cause of uterine disease, the chief symptom being leucorrhœa, attended with pain. The seat of the laceration is most frequently on the left side of the cervix. This is caused by the more frequent left occipital position of the foetal head. Emmet's operation consists in vivifying the edges of the laceration, and bringing the edges together with silver wire. The sutures are usually left in for fourteen days. The operation has not hitherto been attended with any dangerous sequelæ, but is not absolutely safe from perimetritis.

FANCOURT BARNES, M.B.

#### RECENT PAPERS.

On Ulcerative Syphilitic Hypertrophy of the Neck of the Uterus. By Dr. Arnie Martin. *Annales de Gynécologie*, July, August, October, and November 1877.)  
 Note on a Case of Extra-uterine Pregnancy. By Dr. Proust. (*La France Médicale*, November 10.)  
 On Abortion of Syphilitic Origin. By M. Parrot. (*Le Progrès Médical*, November 24.)

### OPHTHALMOLOGY AND OTOLOGY.

**GRADENIGO ON KERATOPLASTY.**—An interesting series of articles has appeared in the recent Italian medical journals on plastic operations upon the cornea. In the report of the ophthalmic section of the Turin Medical Congress, given in the *Annali di Ottalmologia*, Fasc. 1, 1877, a paper appears by Professor Gradenigo of Padua, in which he discusses the feasibility of keratoplasty, which he calls the "oculist's philosopher's stone". The author first notices the advantages to be gained by substituting a transparent substance in the place of an opaque cornea, and the want of success which has hitherto attended attempts to transplant portions of transparent cornea or to introduce artificial corneæ of glass or other substances. After investigating the causes opposed to success, Professor Gradenigo believes failure to have been due to the following. 1. The corneal tissue, although rich in nerves, has no blood-vessels except in the foetal state. A pannous cornea will tolerate and repair a wound or loss of substance more readily than a normal cornea. 2. The secretion of the aqueous humour, like the rapid products of the ocular mucous membrane, acts damagingly against the prompt agglutination of the margins of the cornea and its graft; and if sutures,

however fine, be used, foreign bodies are introduced whose presence will probably be injurious. 3. Up to the present time, attempts have been made to introduce too large an extent of new cornea, whilst a point of transparent tissue is all that is really needed to afford useful vision. These new portions have been inserted into eyes altered by disease, the anterior chamber has been wanting, or the conditions for nutrition of the new fragment have been unfavourable. Professor Gradenigo made many experiments with a view of overcoming the difficulties before him, and at last adopted a method which has proved successful.

Remembering the greater tolerance of the pannous cornea, the author endeavoured to produce new blood-vessels upon the corneæ of animals, such as are found in keratitis superficialis, by introducing irritating substances into the conjunctival sac. The result did not prove satisfactory. Still keeping the same object in view, the author cauterised the corneal surface, excepting only a small triangular portion in the centre, the site of the intended graft. The action proved too diffused, and eventually the cortical layers of the cornea were removed by the knife. By then dissecting up the surrounding conjunctiva (as in the early steps of enucleation of the globe) and drawing it forward over the denuded cornea, fixing it with sutures, artificial pterygia were obtained. These afforded a solid base for the supply of nutrition to the cornea. This procedure was adopted both in the eye to receive the graft and the eye (generally a rabbit's) supplying it.

Adhesion of the conjunctiva to the cornea takes place rapidly and firmly. The clear centre of the cornea should be not greater than one-third of its extent, and it should be surrounded by from three to five apices of conjunctiva. When these pterygia are fully formed, the operation may be undertaken. First of all the conditions of the eye of the patient should be carefully investigated, as to its freedom from morbid secretions, sensitiveness to light, etc. The patient should then be placed in the horizontal position, and fully anaesthetised, the eyelids being kept widely apart by the speculum. The conjunctiva is then carefully removed by scissors from the cornea and surrounding sclerotic. The flow of blood is at first encouraged by means of hot sponges, then completely arrested. An opening is then made in the cornea, of the size and shape of the intended graft. Then the animal (rabbit) being killed, the whole of the conjunctiva is carefully dissected off the sclerotic, and the whole of the cornea removed with the conjunctiva and the artificial pterygia attached. This is immediately placed upon the back of the left hand of an assistant, to facilitate the later stage of the operation and to maintain a certain degree of heat in the tissues. The final stage of the operation consists in clearing the conjunctiva carefully off the corneal graft, until the operator is able to cut it to the size of the opening made in the human cornea. The graft must then be placed in the opening made for it, the conjunctiva adherent being spread out by means of smooth-pointed forceps over the denuded surfaces of the cornea and sclerotic, and secured in position by sutures. The eye must be closed and covered with a soft pad and bandage, and not opened for twenty-four hours. The eyelids should be cleansed, and the bandage renewed every day, but the upper lid should not be raised for three days.

A modification of this process, in which the whole of an animal's cornea prepared after Professor Gradenigo's method was transplanted, is narrated by Dr.



Rosmini of Florence, in a letter to Professor Strambio, published in the *Gazzetta Medica Italiana-Lombardia*, 28 April, 1877. This case was apparently successful for a few days, but the cornea was soon destroyed by parenchymatous keratitis.

In a masterly letter (*Annali di Ottalmologia*, Fasc. 2, 1877), Professor Gradenigo draws Dr. Rosmini's attention to what he conceives to be the sources of his failure, viz., the attempts to transplant an entire cornea, and the neglect of careful adaptation of the conjunctiva and its ineffectual securing by sutures. Professor Gradenigo also remarks, in a tone of gentle remonstrance, on the impatience which Dr. Rosmini showed in operating before the arrival of a rabbit specially prepared by Professor Gradenigo at his request. This draws from the editor of the *Annali di Ottalmologia* some strong expressions of admiration for Professor Gradenigo's patient work and brilliant results, and also a remark on the untimely haste with which the report of the apparent success of Dr. Rosmini's operation was given to the journals, which is worth quoting. Speaking of premature communications to journals as being too much the fashion now-a-days, he says: "These communications appear to us capable of comparison with those fireworks, which, darted by night into space, illuminate the horizon for a little while, but which spend themselves quickly in falling, and leave nothing behind them but an obscure trace of smoke, and the darkness as before."

LLOYD OWEN.

NICATI ON THE ABSORPTION OF CATGUT THREAD IN THE EYE.—Dr. Nicati (*Gazette des Hôpitaux*, June 28, 1877) gives an account of some experiments made on animals with a catgut thread, such as has been used by Wecker for drainage of the eye. Dr. Nicati passed a thread of catgut through the eye near the equator, and observed with the ophthalmoscope the changes it underwent. Immediately after passing the thread, the tension of the eyeball was diminished. The next day, there was considerable ecchymosis of the conjunctiva, the papilla was red, and the upper half of the vitreous body was cloudy. On the third day the optic nerve appeared normal, but there were little red specks at its periphery. On the twentieth day a very remarkable phenomenon was seen; at the points of entrance and exit of the thread, a new growth was formed, rich in vessels, which ensheathed the seton and had the appearance of a vascular thread. The tension of the eye remained without alteration below the normal after the first day. As in operations performed on man, the portion of the thread which was external to the eye was rapidly absorbed.

In drainage of the anterior chamber, the thread was passed through the cornea, so that three millimetres of the thread were in the anterior chamber, and the ends were cut off close to the cornea. The aqueous humour escaped entirely; the next day the chamber was refilled; the thread swelled up in the cornea and in the anterior chamber, but there was no inflammation. Soon a new vascular growth was formed around the thread; this rapidly filled the whole space between the cornea and the thread with vessels, and the cornea in its neighbourhood became very vascular. After sixteen days the vessels began to dwindle away, leaving a clouded line, and at the same time the thread was seen to be undergoing rapid absorption, which was soon completed. The tension of the eyeball was diminished on the first day; but was afterwards equal to but not greater than

that of the other eye. Dr. Nicati employed the same methods of operating used by Wecker, Martin, and Gauran.

RUMPF ON BINOCULAR ACCOMMODATION.—The additional part of Zehender's *Monatsblätter*, for July, consists of an inaugural dissertation on this subject by Dr. Theodore Rumpf, read before the medical faculty of Heidelberg. This is a work of the highest physiological interest, as well as of extreme practical importance to the ophthalmologist. The author shews, by a series of the most careful experiments, that the accommodation of the two eyes is always equal both in emmetropia and in ametropia, except, as has been shewn by Werth, where the faculty of binocular vision is absent, as in strabismus from considerable defect of one eye. This fact is easily demonstrated, in the case in which the two eyes have equal refractive power, by placing a printed page on one side of the visual field so that it is nearer to one eye than to the other. It will then be found that only the eye which is nearest is accommodated to the distance of the page; by covering this eye, the page will be seen out of focus. He explains the fact that Schneller and Woinow arrived at a different conclusion, by their not having eliminated the effect of astigmatism. Indeed, in repeating their experiments, he arrived at a negative result. His measurements were all effected with a fine double wire, so that only one meridian of the cornea was used; thus completely eliminating the error of astigmatism.

ZEISSL ON SYPHILITIC DISEASES OF THE EYELIDS.—Dr. H. Zeissl, in the *Allgemeine Wiener Med. Zeitung* for August 21 and 28, and September 4 and 11, gives a series of articles on syphilitic diseases of the eye-lid. The author recognises three forms of syphilitic diseases of the eye-lids; primary induration, erythematous and papulose eruptions (syphilitic exanthemata), and gumma. He especially draws attention to the difficulty of diagnosis between gummata and primary affections, and remarks that gummata may be confounded with carcinomatous disease (?) or rodent ulcer. Papulose diseases are distinguished from gumma by the subsequent ulceration being superficial, whilst the ulceration following gummata in the eye-lids is deep and destructive. The great peculiarity of syphilides in this region is their great malignity and the destruction of tissue which they cause.

BERGMEISTER ON THE CLASSIFICATION OF INFLAMMATIONS OF THE CORNEA.—Dr. Otto Bergmeister writes at considerable length in the *Allgemeine Wiener Medizin. Zeitung* for the present year, on the classification of diseases of the cornea. He concludes by dividing corneal inflammation into superficial, deep and choroidal. He includes in the former division phlyctenulæ, superficial ulcers, and pannus; in the second, deep ulcers, abscess, acute and chronic interstitial keratitis; and in the latter, kerato-iritis and so-called iritis serosa.

MANZ ON EPIDEMIC CONJUNCTIVITIS IN SCHOOLS.—Dr. Manz, of Freiburg, has a long communication in the *Berliner Klinische Wochenschrift* of September 3 and 10, on a form of epidemic conjunctivitis which has of late been very prevalent in schools in Germany. The most characteristic symptom of this epidemic is the presence in the conjunctiva of small clear vesicles, which are often the only indication of the disease; the active symptoms are congestion and swelling of the membrane. The disease runs a definite course, and is very contagious. It

larly, but at distant intervals. These forms are mostly symptomatic of several varieties of cachexia.

1. The *malarial form* can generally be distinguished by the great regularity of the intervals between the paroxysms. The pain, which is usually felt at the supra-orbital foramen on one side of the face, comes on at a certain time every day. The history of malarial taint will aid in the diagnosis. The test treatment by large doses of quinia, thirty grains at a time, will determine conclusively the malarial origin.

2. *Megrim or migraine*, the so-called hemicrania, is generally either connected with disturbed menstruation, or is hereditary. When the menstruation is at fault, the pain is commonly gastric. Hereditary megrim usually attacks the first branch of the fifth pair of nerves. The pain, which centres in the eye or brow, the supra-orbital or temporal fossa, is very acute. There is nearly always nausea or vomiting, which passes off in the course of a few hours. This form of neuralgia, commonly known as "nervous headache", can be easily recognised by the long intervals between the attacks, the location of the pain, the history of menstrual disorder or hereditary disease, and the occurrence of sick stomach after the pain comes on.

3. The third variety is the *anæmic, chlorotic, or syphilitic*, and is due to an impoverished diseased state of the blood from anæmia, syphilis, or chlorosis. Sometimes the pain is localised in one of the branches of the trigeminus, sometimes in other nerve-trunks. The cause of this neuralgia is quite frequently, perhaps, over-exertion. The attacks are long and persistent.

4. *Rheumatic neuritis, or faceache*, is to be distinguished from periostitis by the locality of the pain. In some cases exploration will show that the periostitis is limited to some one tooth, which feels longer than the others, and has in fact been pushed bodily upwards above the level of its fellows by the inflammation at its roots. Local swelling, too, will usually be noticed in periostitis. The existence of rheumatic pains in other parts of the body will usually strengthen the diagnosis. There will in most cases be a well-authenticated history of exposure.

5. The fifth variety is due to *toxic* causes, such as lead or arsenic poisoning. The blue line on the gums or the characteristic signs of arsenical poison will easily separate this variety from the others.

Under the second group of neuralgias, those coming on in sharp paroxysms at short intervals, and generally as reflex inductions of peripheral irritation or centric pressure, are three separate forms: tic-douloureux, anæsthesia dolorosa, and tic. These three forms usually go by the name of trigeminal neuralgia. The trigeminal is a nerve of both sensation and motion. By a smaller root, the gustatory, it also becomes a nerve of special sense. Therefore, either the sensation or motion, or both the sensation and motion of one side of the face may be affected through the branches of a right or left trigeminal nerve. The branches of this nerve are most exposed to neuralgic influences by reason of their passage through narrow canals or openings in bones, where they are readily compressed; and from the distribution of the nerve over a large cutaneous surface, more exposed to cold and changes of weather than any other part of the body. In trigeminal neuralgias the three special points of pain are the supra-orbital foramen, the infra-orbital foramen, and the mental foramen. If the neuralgia be limited to the first branch of the fifth pair, the pain spreads over the

brow, eyebrows, and eyelids, and sometimes the eyes are attacked.

In tic-douloureux there is both pain and spasm. The causes of this form of facial neuralgia are usually peripheral in their origin, a decayed tooth, the pressure of a cicatrix upon one of the superficial nerve-branches, or local inflammation of the neurilemma. In some cases, however, the lesion may be centric, the pressure of a neighbouring clot or tumour upon the nerve-trunk. In this form (tic-douloureux) the paroxysms are repeated at very short intervals; in some cases as many as five or six in the course of fifteen minutes, or even still more frequently. The effect is generally limited to the nerve itself. In severer cases the mouth is drawn to one side, so that the saliva flows over the chin and neck. This saliva is altered in quality. In other cases the teeth chatter, the conjunctiva is injected, the tears flow freely, and a constant discharge from the nose is maintained. In very severe cases the course of the afflicted nerve is marked by a red line. The spasms may occur as often as once in every few seconds.

GALLI ON A CASE OF CUTANEOUS EMPHYSEMA FOLLOWING THE OPENING OF A PULMONARY CAVITY INTO AN INTERCOSTAL SPACE.—Dr. G. Galli describes, in the *Rivista Clinica di Bologna* (extract in *Lo Sperimentale*, October), the case of a phthisical girl, aged 17, who had an extensive superficial cavity at the apex of the right lung. One day the fever increased, and, a short time afterwards, the patient complained of pain at the part of the chest corresponding to the cavity. A soft swelling was formed there, which, on being handled, gave the sensation of crepitation characteristic of emphysema. The swelling gradually spread to the whole right side of the chest, the neck, the face as far as the forehead, and the upper limbs. The patient died six days after the appearance of the emphysema.

At the necropsy, a large cavity was found at the apex of the right lung. The adjacent pulmonary pleura had become firmly adherent to the costal pleura; and at its anterior part the cavity communicated, by means of a large opening in the third intercostal space, with the areolar tissue of the thoracic walls. The third and fourth ribs were inflamed, and denuded at the seat of the lesion. The great and small pectoral muscles, the serratus magnus, etc., were of a blackish colour, softened, and infiltrated with fetid purulent matter.

LACHOWICZ ON A CASE OF FACIAL HEMIPLEGIA.—In the *Przegląd Lekarski*, No. 7, 1877 (quoted in *Allgemeine Med. Central-Zeitung*, October 23,) Dr. Lachowicz relates the following case.—A barber's assistant, aged 17, being tired with work, lay on the ground on a dry stone, and slept. The next day, he noticed that the right half of his face was fuller than the other, and that his mouth was drawn to one side. Three days later, the right side of the face was more swollen; the right side of the forehead and the right eyebrow were immovable. The right eye could not be perfectly closed, and there was much lachrymation. The right ala nasi was not raised in forcible breathing; the angle of the mouth on this side was depressed, and saliva flowed from it. The cheek and neck were turned, the neck was stiff.

Sensation was diminished in the right half of the face. The right cornea and eyelids were less sensitive than the left; even less than the mucous membrane of the right nostril. There was also a difference in the sensibility of the two sides of the lips;



the uvula was diverted to the left, and sensation was diminished in the right side of the pharynx. The sense of smell was impaired in the right nostril. The senses of hearing and sight were similar on the two sides.

From a consideration of this case, Dr. Lachowicz is led to the conclusion, that not only the facial nerve, but also branches of all three divisions of the fifth pair, were affected. A centred cause of the disease must be excluded, as the paralysis was confined to certain muscles, the reflex irritability remaining intact.

The illness lasted a month; and the treatment consisted in the application of vesicants, which were repeated seven times. A. HENRY, M.D.

#### RECENT PAPERS.

- Sensorial and General Hæmiæsthesia of the Left side, apparently of Hysterical Nature, in a Boy eleven years old. By Hippolyte Martin. (*La France Médicale*, November 7.)
- On Idiopathic Abdominal Pulsations. By Dr. Macario. (*Gazette Médicale de Paris*, Nos. 41 and 46.)
- Pulmonary Phthisis Treated on the Shores of the Mediterranean and on the Mountains. By Dr. Thaon. (*Journal de Thérapeutique*, November 10.)
- A Case of Chronic Tubercular Peritonitis. By Dr. Reginald Southey. (*Lancet*, November 10.)
- The Etiology of Typhoid Fever. By M. Ch. Bouchard. (*Revue Mensuelle de Médecine et de Chirurgie*, November, 1877.)
- A Case of Abscess of one of the Anterior Lobes of the Brain. By M. R. Lépine. (*Ibid.*)
- A Case of Febris Intermittens Urticata. By Dr. H. Zeissl. (*Allgemeine Wiener Med. Zeitung*, November 13.)
- On Incipient Tabes. By Dr. M. Gumpelwitz. (*Ibid.*)
- On the Connection between Urticaria and Malaria. By Dr. Rezek. (*Ibid.*, November 27.)
- Clinical Remarks on Neuroses of the Heart. By Dr. Zunker. (*Berliner Klin. Wochenschrift*, November 26.)
- On the Operative Treatment of Pleural Exudation. By Dr. Baum. (*Ibid.*)
- The Operative Treatment of Pleural Exudations. By Dr. Girgensohn. (*Ibid.*)
- The Etiology of Epidemic Catarrhal Jaundice. By Dr. Klingelhoef. (*Ibid.*)

#### SURGERY.

COHN ON THE PRODUCTION OF LOCAL ARTIFICIAL ANÆMIA AS A MEANS OF TREATING DISEASES IN THE EXTREMITIES.—Dr. Bernard Cohn's communication (*Berliner Medicinische Wochenschrift*, October 29, 1877) is founded on an attempt made in three cases to treat acute and chronic inflammations in the extremities, by temporarily rendering the limb bloodless by means of Esmarch's bandage.

Two of the cases reported were of an acute kind. One was an acute phlegmon of the toe, with inflammatory swelling of the foot, in which, after only fifteen minutes' application of the bandage, the inflammatory swelling and pain very notably diminished. The other case was a very painful diffuse inflammatory swelling of the fore-arm. After one application of the bandage, the duration of which is not mentioned, the pain, and, to some extent, the swelling, disappeared. Nor did they reappear when the compression was removed. Some tenderness continuing, the bandage was re-applied next day with a completely successful result. On these two cases the author properly lays less stress than upon the following one. A child  $3\frac{1}{2}$  years of age had suffered for eighteen months from a white swelling in the knee. The disease had originated in a fall, and a well marked acute stage had been followed by a condition in which the chronic changes in the articulation, defined as tumor albus, were quite characteristic. The joint was swollen, painful, much flexed, and scarcely movable, either actively or passively. During

twelve months, treatment had been pursued both in private and at the polyclinic; five gypsum bandages, which had been kept applied during twenty-six weeks, had, amongst other things, been tried. The parents finally had ceased to seek medical aid, and for some months the disease had been left to itself. At this time the child came under Dr. Cohn's care. The affected knee was an inch and a half larger in circumference than the other one, the bones felt thickened, the subcutaneous tissue was infiltrated, and the borders of the patella were difficult to make out. No effusion into the joint was discovered. Passive movements were very limited and painful, and the tenderness on pressure was considerable. The general condition of the child was otherwise satisfactory.

The treatment was commenced by applying the bandage only for a few minutes, but, after four or five days, it could be borne for an hour daily, and sometimes longer. Occasionally the application was made twice daily, when it was allowed to remain half to three quarters of an hour each time. After this it had been practised during a period of three weeks, it was found that the difference in size of the two joints was reduced from four centimetres, or an inch and a half, down to half a centimetre. The condyles had become restored to their normal form, the patella had become loose and movable, the pain and tenderness had completely disappeared, the amount of passive motion was increased, and there was no pain on movement.

Forcible extension was now practised under chloroform, and was attended by a recurrence of the inflammation; but this was rapidly subdued by a continuance of the previous treatment. The final result was almost perfect cure; the little patient could walk and move the joint in all directions without pain; and the only trace of the previous disease which remained was a trifling amount of swelling and a somewhat impaired mobility of the joint.

Dr. Cohn meets some of the objections which may be urged. First, as to the vaso-motor paralysis which follows the use of Esmarch's bandage, and the consequent surcharging of the capillaries after its removal, he is inclined to doubt that this is anything more than a mere temporary condition. Another objection, that the capillaries in the inflamed area are not really emptied, he considers cannot probably be denied, but thinks the property of diffusion of fluids practically answers the same purpose. Dr. Cohn gives some details as to the mode of application of the bandage, the necessity for the limb being thoroughly emptied of blood, and the occlusion a perfect one; also that the final constriction should be made with several turns of the bandage superimposed, rather than with a narrow rope or tube, as this causes less injury, and is more readily borne. For adults the breadth should be four centimetres (an inch-and-a-half), and for children from two and a half to three. How long, he asks, can this bloodless state be maintained? The limit of safety is not likely, he thinks, ever to be reached, and we need not be anxious on this score, if the shutting out of the circulation be perfect. An imperfect occlusion is dangerous. The blood passes by the arteries into the limb, while the venous outlets are completely stopped. The pain is a great difficulty in this method of treatment, but it may be reduced considerably by not applying the bandage constricting the limb above tighter than is absolutely necessary, remembering always that the tendency is to apply it too tightly. Further experience must determine how often the constriction may be repeated,

and whether it should be continued on each occasion as long as possible, or for shorter periods at shorter intervals.

The author, in conclusion, begs for a further trial of his suggested method; and certainly the results obtained, especially in the third of his cases, would appear to justify an affirmative answer to his request.

WILLIAM MAC CORMAC.

**AUSPITZ ON EXCISION OF THE HARD CHANCRE AS A PREVENTATIVE OF SYPHILITIC INFECTION.**—Auspitz (*Archiv für Dermatologie und Syphilis*, 1 and 2 Heft, 1877) excised the primary induration of syphilis in 33 cases. In 4 the result could not be observed; in 2, constitutional syphilitic symptoms were present at the date of the excision, and the disease followed its usual course; and in 4 the result is still doubtful. Of the remaining 23 persons, 9 were nevertheless affected subsequently by syphilis, but in 14 cases within a sufficiently long period of observation after the excision no syphilitic symptoms had developed, and in these the excision may be held to have preserved the individuals from constitutional disease. Induration of the inguinal glands did not interfere with the success of the measure. The author believes that, if the excision had been practised at an earlier stage, the proportion of successful cases would have been larger. Those cases in which the wound healed without fresh induration remained, as a rule, free from syphilis. The author infers from the results that neither the primary induration nor indolent swelling of the inguinal glands is a proof of general infection of the organism.

**AUSPITZ AND UNNA ON THE ANATOMY OF THE PRIMARY SYPHILITIC INDURATION.**—The authors (*Archiv für Dermatologie und Syphilis*, 1 and 2 Heft, 1877) find that there are essential histological differences between the soft and hard chancres. The characters distinctive of the latter are hardness and chemical change in the bundles of connective tissue, and a peculiar development of the epidermis. The epidermis grows downwards in processes which send out projections horizontally to the skin, and these are subsequently snared and isolated by the growing connective tissue. Masses of granulation-cells penetrate to the horny layer of the epidermis, and are also found in the cutis bounded by tracts of epidermis. The form of the sclerosis depends on the arrangement of the blood-vessels, the process taking its origin from the adventitia. The coats of the blood-vessels are markedly affected, those of the lymphatic vessels to a less degree. G. THIN, M.D.

**HAMILTON ON DIVISION OF THE FEMUR BY SUBCUTANEOUS OSTEOTOMY.**—In the *Ohio Medical Recorder* for August 1877, Dr. J. Hamilton, of Columbus Medical College, relates what he believes to be the first case in which subcutaneous section of the femur by means of the chisel was done in America. Mr. R., aged 23, apparently a healthy man, had an attack of right morbus coxarius at the age of 13. Suppuration occurred, and several sinuses formed, one of which remained open, and continued to discharge a slight amount of pus. The femur became flexed, and firmly fixed in such a position that, when he stood erect, the lower extremity was raised more than an inch above a right angle. The knee-joint remained good, except that it could not be fully extended. As compared with the left leg, there was two and a half inches of shortening, of which one inch and a half was in the thigh, and an inch in the leg.

The patient was placed on the operating table at the Columbus Medical College, February 8th, 1877, and put under the full influence of ether. A slight longitudinal incision was made down to the bone, just opposite to the base of the trochanter major. A strong chisel, with a cutting edge of one-fourth inch, specially tempered and tested for the case, was now driven by a succession of taps from a mallet, perpendicularly nearly through the bone. This being withdrawn, another chisel, with less thickness and strength, but about the same extent of cutting edge, was entered, first at one, then at the other extremity of this first cut, and in like manner driven through. This latter instrument was provided with a shoulder, based on the estimated diameter of the bone. By using great care as to the direction of the instrument Dr. Hamilton was able to divide the bone very smoothly, without chipping or splintering that he could perceive. The division of the lateral portions of the bone was effected more by changing the direction of the chisel than by the lateral extension of the first opening. The entire division was completed by the use of the chisel, and without any forcible fracturing. In a certain sense, and to a certain extent, the operation was not only subcutaneous but subperiosteal as well.

The patient was placed in bed, and an eight-pound weight extension applied, which was well borne. After a few days, the limb and pelvis were encased in plaster of Paris dressing. There was but trifling inflammation and suppuration. The pus that formed escaped mainly through the old sinus. Fifteen days after the operation, the patient was taken to the country. Six weeks after the operation, Dr. Hamilton received a letter from him informing him that he was getting about, and that he was able to reach the ground with his right foot. Suppuration continued for a few days after the operation. This, however, did not prevent the external wound from healing promptly. The straightened leg, as compared with its fellow, is shortened about three inches and a half.

In the erect position of the patient, before the operation, the femur projected forward an inch above the horizontal, and after the division of the bone the upper fragment continued *in situ*. The change in direction was confined to the lower fragment. This was brought down so that about one-half of its cut surface rested on the periosteal surface of the upper fragment, and under its anterior extremity. Dr. Hamilton considers this position highly favourable, so far as the union and final strength of the bones were concerned. While he lost length equal to that of the upper fragment, he gained length equal to the diameter of that fragment, at the point of division.

Commenting on the operation, he says: In some respects the use of the chisel, in the present case, was very satisfactory. There was little or no breaking; the surfaces seemed very smooth; there was very slight fraying of the periosteum. But, on the other hand, a chisel that is strong enough to be driven through the femur without risk of breaking, must have considerable thickness. The edge cuts the bone—this thick portion compresses it. Is there not a probability that this compression will so far interfere with circulation and nutrition as to cause necrosis? Two months or so after the operation, the cicatrix opened and a sequestrum escaped. It was about a fourth part of a ring of bone, and included that portion which was subjected to greatest compression. At another time a very



slight splinter, and finally a second slight sequestrum, escaped.

**MONTON ON THE TREATMENT OF FRACTURES WITH COTTON-WOOL DRESSINGS.**—Dr. Monton has, in M. Broca's wards, carried out a series of experiments which have demonstrated that compression made with cotton-wool dressings lessens the power of muscular contraction in a very remarkable manner, and for that reason it is a useful auxiliary in the reduction of fractures. The use of this bandage also obviates the complications which may supervene in compound fractures. Finally, this means allows the delay of the serious operations rendered necessary by wounds. Dr. Monton's conclusions are as follows. 1. Fractures may be reduced, and kept in place by cotton-wool dressing. 2. Cotton-wool dressing is exclusively indicated in fractures with communicating wounds in hospitals and all other localities where the air is vitiated by overcrowding. 3. The same dressing gives the power of delaying operations actually contra-indicated by the state of the patient, with advantage both to him and to the surgeon.

**GUYOT ON PSEUDO-MEMBRANOUS CYSTITIS AND ITS TREATMENT.**—This variety of cystitis is generally met with after the application of blisters. It is, however, sometimes found in the case of chronic and long-standing lesions of the bladder, such as calculi, tuberculisation, and muco-purulent cystitis. The nature of the false membranes thus expelled with the urine has been sufficiently discussed. After it had been long admitted that they were the result of an exfoliation of the mucous membrane, it was afterwards sought to be demonstrated that they were almost always formed by fibrine, enclosing epithelial cells. This opinion is defended by M. Girard, and it seems the most rational; however, he admits, with Dolbeau, the exfoliation of the mucous membrane by fragments; but as a very rare phenomenon. The treatment consists specially in repeated washings out of the bladder, followed by slight cauterisation with a weak solution of nitrate of silver, which is left in the bladder during one or two minutes. M. Guyot (*Thèse de Paris*, 1877) obtains neutralisation with water in which salt has been dissolved. M. Guyot also seems to have successfully employed a solution of borax, of the strength of one part to the hundred, in place of the nitrate of silver.

**BOUROTTE ON THE TREATMENT OF ANTHRAX OF THE FACE.**—Carbuncle and boil of the face have often proved fatal. Therefore many writers, amongst others Reverdin, have come to the conclusion that anthrax is an exceptionally serious affection. According to them the danger is due to the phlebitis of the veins of the face, which easily spreads to the cranial sinuses. Gosselin, however, and other surgeons do not believe in this great danger; on this subject Gosselin retains the same opinion, expressed by him on the occasion of a discussion on it at the Academy of Medicine in 1866. Partly inspired by this illustrious surgeon, M. Bourotte, in his *Thèse de Paris*, 1877, endeavours to demonstrate that anthrax of the face, of the lips, as of other parts, is nearly always cured. The complication of phlebitis, which is the exception, is not necessarily fatal. Friction does not hasten cure, and exposes the patient to the risk of putridity, and consequently pyæmia. For the majority of cases of anthrax of the face expectant treatment, without operation, is desirable. In serious cases there is, perhaps, necessity for cauterisation.

## RECENT PAPERS.

- Remarks on some Points in connection with Syphilis. By Mr. J. R. Lane. (*Medical Press and Circular*, November 28.)  
 Note on a Case of Traumatic Lesion of the Liver. By D. Mollière. (*Le Progrès Médical*, November 10.)  
 On the Causes and Treatment of Urethro-vesical Valves. By Dr. Felix Bron. (*Lyon Médical*, November 11.)  
 Notes on Three Cases of Acute Gangrene. By M. Mondan. (*Lyon Médical*, November 11.)  
 Unilocular Cyst opening into the Intestine. By M. F. Ferrier. (*Revue Mensuelle de Médecine et de Chirurgie*, November 1877.)  
 Lectures on the Treatment of Wounds. By M. Trélat. (*Le Progrès Médical*, Nos. 44 and 46, November 1877.)  
 Case of Molluscous Tumour of the Ear. By Dr. Kirk Duncanson. (*Edinburgh Medical Journal*, November 1877.)  
 On Sudden Death after Severe Burns. By Dr. Ponfick. (*Berliner Klin. Wochenschrift*, November 12.)  
 The Treatment of Ulcers of the Leg. By Dr. Becker. (*Ibid.*, Nov. 19.)  
 Results of Antiseptic Treatment in the Magdeburg Hospital. By Dr. P. Heinecke. (*Deutsche Medicin Wochenschrift*, Nov. 17 and 24.)  
 Retro-peritoneal Enterocolic, Strangulation of the Intestine. Perforation, Death. By M. Lataste. (*La France Médicale*, November 24.)  
 A Clinical Lecture on Colotomy. By Christopher Heath, F.R.C.S. (*British Medical Journal*, December 1.)  
 The Treatment of Irreducible Hernias by Subcutaneous Injections of Morphia. By Dr. Philippe. (*Paris Médical*, November 29.)  
 Remarks on the Pathogeny of Fistulæ in General. By Dr. Samuel Pozzi. (*Gazette Médicale*, December 1.)  
 Postpubic perilymphitis. By M. Jerrillon. (*France Médicale*, November 28.)  
 M. Verneuil's Plan for Disarticulating the Hip-joint, and his Method of Dressing. By Dr. Brochin. (*Gaz. des Hôpitaux*, December 1.)  
 Clinical Lecture on Fractures of the Femur. By Dr. F. H. Hamilton. (*Philadelphia Medical Times*, November 24.)  
 Foreign Body in the Esophagus, with Perforation of the Aorta. By Dr. Aschenborn. (*Berliner Klinische Wochenschrift*, Dec. 10.)

## DISEASES OF CHILDREN.

**LEDERER ON MELÆNA NEONATORUM.**—In a paper read at the recent meeting of German naturalists and physicians in Munich (*Central-Zeitung für Kinderheilkunde*, November 15) Dr. Lederer, of Vienna, expressed his regret that the melæna of new-born infants was scarcely mentioned in modern text-books on diseases of children.

He had treated eight cases, of which five were fatal from violent gastric and intestinal hæmorrhage, together with bleeding from the umbilicus. The patients were all boys, the youngest sixteen hours and the oldest fourteen days old; they were all mature and well developed; five were strong and well nourished, while three were tender and feeble; four had hæmorrhage from both stomach and bowels; three from the bowels alone, and one from the stomach alone. In the cases which recovered, the discharge was arrested within twenty-four hours, the gastric hæmorrhage always ceasing before the intestinal. A relapse occurred in one case only at the end of twenty-four hours. In none of the children did a disposition to hæmorrhage remain, but in nearly all there was a tendency to intestinal catarrh.

Dr. Lederer regards the etiology of melæna neonatorum as not yet settled. He believes that the disease is not always the result of embolism, but that it depends on various causes, as it varies from single clots in the stools to violent hæmorrhage. As a predisposing cause, he refers to the occurrence, in most of his cases, of hæmorrhage from some organ in the father or mother. With regard to the treatment, he directs special attention to the fact that in all his cases the children were fed with breast-milk by the mother or nurse. In the severe cases, iced compresses were applied to the abdomen. The internal treatment consisted in the use of solution of sesquichloride of iron, nitrate of bismuth, and tannate of quinine. The emaciation, anæmia, and

does not appear to give rise to corneitis, but cases occur which it is difficult to diagnose from ordinary granular ophthalmia. It is the follicular ophthalmia of recent writers.

MICHEL ON THE TREATMENT OF PARALYSIS OF THE MUSCLES OF THE EYE.—The *Klinische Monatsblätter für Augenheilkunde* for November contains a short communication from Professor J. Michel on the treatment of paralysis of the muscles of the eyeball by gentle traction. His treatment, which was successful in a recent but total paralysis of the abducens of rheumatic origin, consists in taking hold of the insertion of the affected muscle with a pair of fixing forceps, and gently drawing the eyeball as far as possible in the direction in which the muscle would move it; afterwards bringing it back to its former position. This manœuvre is repeated backwards and forwards for about two minutes every day. The author states that the manipulation is attended by but little pain, and that the slight inflammation set up in the conjunctiva is easily combated by cold applications. After each sitting a slight amelioration was observed. Immediately after the sitting, the muscle was found to be capable of contracting to the extent of a line and a half to two lines. This power was less after an hour, but was still perceptible. He states that recovery was perfect after five weeks of this treatment.

RUTENBERG ON OPHTHALMOSCOPIC EXAMINATION.—A paper by Dr. Rutenberg on the best method of obtaining a view of as large a portion of the retina as possible by the direct method with the ophthalmoscope, occupies the greater part of the *Klinische Monatsblätter für Augenheilkunde* for November. He finds that the largest field visible at one time, under the most favourable circumstances, is five millimetres; and that the only practicable method of illuminating this portion of the retina is by increasing the size of the source of light. He recommends that the lamp should be placed behind a disc of opal glass of the kind used with the Sugg's patent gas burners. In this way a disc of soft light of the required size is easily obtained.

SCHOLER ON PTERGIUM.—The *Berlin. Klin. Wochensh.*, of November 12, contains the report of a lecture by Dr. H. Scholer on ptergium. The lecturer considers this affection the result of an adhesion of a fold of the conjunctiva to an ulcer of the cornea, and hence, in many cases at least, a form of the healing process. He first came to this conclusion by observing a case of gonorrhœal ophthalmia, with an ulcer of the cornea 6 millimètres long and 1.5 millimètres wide, in which healing of the ulcer was effected by the swollen conjunctiva hanging over the upper edge of the cornea, and coming into contact with the ulcer. It first filled the cavity and then united with the ulcer. He observes that, if this had not resulted, the eye would have been inevitably lost. Another case also occurred to the lecturer. He removed a ptergium, the effect of a burn, and, by so doing, set up a destructive ulcer of the cornea. Led by these phenomena to investigate the subject, he made a series of forty-five experiments on animals, rabbits, cats, and dogs. He first produced an ulcer on the cornea, and then covered it over with a strip of conjunctiva dissected from the eyeball, but left attached at its corneal margin, and kept in its place by catgut sutures; the epithelial surface being placed next the cornea. He next covered the exposed under-surface of this bridge of conjunctiva by a second

bridge of conjunctiva, with its epithelial surface turned outwards. Figures explaining the steps of the operation accompany the lecture. In the dogs, three in number, the adhesion of the conjunctiva to the cornea was permanent; but in the rabbits, after the healing of the ulcer, the slips of conjunctiva shrivelled and were thrown off. The physiological effects of covering the cornea were extreme vascularity of the covered portion and healing of the ulcer. The author leaves the effect of the conjunctival epithelium on the ulcer an open question. The mechanical effects were the protection of the wound from all external influences, and the continuous pressure exerted by the bridge of conjunctiva.

Dr. Scholer states that he has performed the operation sixteen times in the human subject, always in otherwise hopeless cases, with good results; indeed he had but one failure. He considers that this treatment is indicated in all cases of extensive ulceration of the cornea, either with or without perforation; and in cases of gaping wound of the cornea, with or without prolapse of the iris in fistula of the cornea, after paring the edges of the fistula. In cases of partial or complete staphyloma, perforating wounds of the sclerotic and in cystoid cicatrices, as only the superficial layer of the conjunctiva need be employed in this operation, no shrivelling of the conjunctival sac need follow it. B. T. LOWNE.

#### RECENT PAPERS.

- On Metastatic Inflammation of the Eye. By Dr. M. Landsberg. (*Berliner Klin. Wochenschrift*, September 17.)  
 The Principal Modern Opinions on Granular Conjunctivitis. By Dr. Gayot. (*Gazette des Hôpitaux*, September 29.)  
 Extraction of Cataract by the Quasi-linear or Mesocyclic Simple or Combined Section Plan. By Dr. Monoyer. (*Revue Médicale de l'Est*, July, August, September, and October.)  
 On the Hygiene of Light in Schools. By M. Emile Trélat. (*Bulletin de la Société de Médecine Publique*, June and July 1877.)  
 On the Use of Coloured Glasses in Ocular Hygiene. By Dr. Fienzal. (*Ibid.*)  
 Notes in Aid of the History of Ophthalmology amongst the Ancients. By Dr. Charles Daremberg. (*Gazette Médicale de Paris*, October 27.)  
 On Pigmentary Retinitis. By Dr. Panas. (*La France Médicale*, October 27.)  
 Removal of a Sequestrum from the Tympanic Cavity of a Child. By Dr. A. Hartmann. (*Deutsche Medicinische Wochenschrift*, October 27.)  
 On Congenital Affections of the Eyes and their Appendages. By Dr. Galezowski. (*Réveil d'Ophthalmologie*, Oct. 1877.)  
 On Wounds of and Foreign Bodies in the Eyeball. By Dr. A. Yvert. (*Ibid.*)  
 Considerations on Ocular Paralysis. By Dr. Cinquet. (*Ibid.*)  
 Gunshot Wound of the Orbit. By Dr. Ducellier. (*Ibid.*)  
 Considerations on the Treatment of Purulent Ophthalmia. By Dr. Ch. Abadié. (*Bulletin Général de Thérapeutique*, Nov. 30.)

#### MEDICAL CHEMISTRY.

YVON ON UREA IN THE BLOOD.—In the *Journal de Pharmacie et de Chimie* for May, M. Yvon has an article on the dosage of urea in the blood, and the quantity and variation in the body in hemiplegia. About 30 grammes of normal and 15 to 20 grammes of abnormal blood are sufficient for experiment. The blood is received directly it issues from the body in tarred stoppered flasks of about 45 grammes capacity, and whose weight does not exceed 100 grammes. After exact weighing, the blood is poured into a glass mortar with about four times its volume of alcohol (90°); and, the clot being carefully broken up, the whole is thrown on a filter. The flask is washed out with a fresh quantity of alcohol, or the washings also filtered. The filtrate (No. 1) thus obtained by the direct treatment of the blood with alcohol, is set aside; it contains the greater



part of the urea. The filter and its contents are next returned to the mortar, or rubbed up with 50 grammes of pure fine sand. This mixture is then lixiviated with alcohol, or, as this process requires time, the divided clot may be repeatedly moistened with alcohol, and expressed through a piece of strong linen until the alcohol passes uncoloured. This alcoholic extract (No. 2) must be filtered and evaporated over a water-bath, and when the alcohol is dissipated No. 1 extract is added to the capsule, the liquid being stirred all the time. The residue is extracted with a small portion of distilled water to separate the fatty matters, and filtration performed. With the washings there should not be more than 12 to 15 cubic centimetres of filtrate, which serves for at least two titrations of urea by means of the hypobromite of soda method.

In the normal state, Yvon found .018 per cent. of urea in the blood (agreeing with Gréhaut); in a case of typhoid fever .042 per cent.; in cases of uræmia .2 per cent. (and more); and in cases of hemiplegia always an augmentation, which is not the same on both sides. In different cases of old standing the paralysed side contained .0195 to .0539 per cent., and the healthy side .0318 to .0628 per cent.; but in a case of 3 days' standing, .05 on the paralysed side, and .0467 per cent. on the healthy side.

[May this not be due to the difference in the condition of the vaso-motor system? *Rep.*]

T. CRANSTOUN CHARLES, M.D.

SENATOR ON THE EXCRETION OF INDICAN IN DISEASE.—Prof. Senator (*Berliner Klin. Wochenschrift*, October 1) has found an increased excretion of indican in peritonitis, in ileus with stercoraceous vomiting, in cancer of the stomach, in malignant tumours of the abdomen, in pernicious anæmia, leukæmia, and pseudo-leukæmia, in acute febrile diseases, in idiopathic contracted kidney, and very frequently in phthisis. He uses the following method. To a certain quantity of the urine to be examined an equal amount of fuming hydrochloric acid is added. The result frequently is the formation of a dark blue cloud, which becomes more distinct on the addition, by drops, of a saturated solution of chloride of lime. The indigo freshly formed from the indican is best extracted by chloroform, and the amount, whether greater or less, can be estimated from the colour. In many of the cases in which there was an increase of indican, the urine also contained an abundance of lime.

## PSYCHOLOGY.

RIVA ON INTERMITTENT LYPEMANIA.—In the *Rivista Sperimentale di Freniatria e di Medicina Legale*, April-June 1877, Dr. Riva describes a remarkable case of intermittent lypemania, in which transfusion was employed with some benefit. At one time the patient would be motionless, in a state of stupor, and unconscious of all that was passing around him, and then in a day or two would be restored, and would be able to reason upon his condition. The writer enters into a very minute clinical examination of the case, including the use of the stethoscope, ophthalmoscope, sphygmoscope, and thermometer, but with no very definite results, so far as the treatment of such cases is concerned. Dr. Riva considers that these cases depend on a disturbance of the vaso-motor system, and not on serous effusion between the membranes of the brain.

A. S. TAYLOR, M.D.

JENSEN ON LUNACY STATISTICS.—In a review of the statistics of the Allenberg Asylum for the whole twenty-five years of its existence, which is published in the *Irrenfreund*, No. 9, 1877, Dr. Jensen draws attention to the large proportion of recoveries which occurred among patients of the lower classes, as compared with those of well-to-do patients. Of 105 men and 50 women who had either independent means or belonged to the mercantile classes, only 18 of the former and 7 of the latter (16.1 per cent.) recovered, while among 83 males and 123 females belonging to the working classes, there were respectively 47 and 67 recoveries, or 56.2 per cent. in all. This difference is attributed to the fact that the upper classes, having the means to provide for their insane relatives, frequently keep them at home as long as possible, until the time has passed when a cure might have been effected; whereas labourers, domestic servants, etc., are simply in the way as soon as they become unfitted for their usual work, and are therefore quickly sent to an asylum.

Of 1,093 "curable cases" admitted, 55.4 per cent. recovered. After subtracting those who recovered within three months of their admission, there were still 46.8 per cent. of recoveries; after six months, 31.4 per cent.; after one year, 13.9 per cent. After two years the chances of cure, even among these originally curable cases, amount to only 5.1 per cent.

Dr. Jensen also finds that, whereas 35 per cent. of all cases received from a rural district have been discharged recovered, there have been only 27 per cent. of cures among patients received from an urban district. This is also explained by the fact that patients coming from a large town are mostly in better circumstances than those from an agricultural neighbourhood; the former are accordingly kept longer at home among their friends. The statistics show that 44 per cent. of the patients from the town were entered as first and second class patients, against 14 per cent. of the country patients. The above figures show extremely well the necessity for bringing patients under suitable treatment as quickly as possible after the commencement of an attack of insanity.

CHARLES W. S. COBBOLD, M.D.

SAVAGE ON THE INHERITANCE OF INSANITY.—In the current volume (vol. xxii, third series) of *Guy's Hospital Reports*, p. 57, will be found a most valuable and suggestive paper by Dr. Savage of the Bethlem Hospital, entitled, *Some Relations of Mental Disease to Inheritance*. "Some readers", remarks Dr. Savage, "may consider I have attributed too much to inheritance; to these I would say, that the more carefully I study nervous disorders, the more I am struck by the quantity of transmitted disease, and, I had almost said, the rarity of well investigated cases without a neurotic history". He is, however, almost in agreement with Dr. Maudsley in his scepticism as to the statistics of heredity in insanity, and in his conviction that they are untrustworthy. It has been stated by French observers, that the nervous and mental parts are rarely inherited from the same parent as the shape of the figure and head; but this is not supported by Dr. Savage's observations. At an early stage in the paper, the statistics of the Bethlem Hospital for the last five years are examined, with the following results. In about 8 per cent. of admissions the family history is unknown. Out of 1,072 patients admitted in the interval, from January 1, 1872, to November 1, 1876, 375 patients, of whom 143 were males and 232 females, had one or more insane blood-relations.

This is 34.9 per cent. of both sexes; the males being 32.2, and the females 36.8 per cent. If those are excluded in whom the history was defective, a total of nearly 38 per cent. is the result. Subjoined is a table of insane relationships.

	MALE.	FEMALE.
Patients having an insane father . . .	31	34
" " " " mother . . .	21	63
" " " " insane grandparents . . .	17	30
" " " " brothers . . .	25	41
" " " " sisters . . .	28	55
" " " " uncles . . .	22	31
" " " " aunts . . .	26	41
" " " " cousins . . .	14	20
" " other blood-relations insane . . .	1	3
" " " several relations insane . . .	46	77

(Some patients appear under several heads.)

It is seen that the insanity of the father passes pretty equally to sons and daughters, but the mother's insanity is specially dangerous to daughters. The number of females having insane sisters is very large; thus confirming the statement that the female sex has a specially great tendency to receive the taint from parents. More insane patients have insane mothers than insane fathers. In the begetting of insane children, each parent has about an equal share of passing on an insane taint; but the offspring, being dependent on the mother when growing and being nourished in the womb, has a greater chance of receiving physical and mental peculiarities from this parent.

Dr. Savage has been struck by several cases in which both phthisis and insanity were in the families, and has seen some persons live to become insane, while others maintained their reason, but sank from phthisis. Of 277 males and 401 females admitted into Bethlem during the three years 1874-76, 91 males and 155 females had a history of insanity in blood-relations; and, of these, 19 males, or 20.9 per cent., and 32 females, or 20.6 per cent., had, in addition, lost blood relations from phthisis in some form or other. Subjoined is a table of patients with neurotic inheritance admitted in the last five years.

	FEMALE.	MALE.
Mania . . . . .	97	52
Melancholia . . . . .	101	69
Dementia . . . . .	10	6
Delusional insanity . . . . .	24	5
General paralysis . . . . .	0	11

Of 207 cases of puerperal insanity examined by Dr. Savage (*Guy's Hospital Reports*, vol. xx, third series, 1875), 65 had a family taint, 22 deriving it from the male side, and 37 from the female side; its origin in six being unknown.

With regard to the relationship of epilepsy to insanity, 17 cases are collected of insanity which have epileptic blood relations, and, out of which, 10 have other relatives insane. Most of the cases were subject to maniacal attacks, only two suffering from melancholia; which is noteworthy, as mania may mask epilepsy, as in "épilepsie larvée". As regards drink, the love of it in the parent has a great tendency to re-appear in the children. Drunkenness in the parent may be followed by epilepsy in the children.

Dr. Savage gives many interesting cases and tables illustrating the hereditary transmission of a tendency to commit suicide. With regard to general paralysis, he believes that a fair number of those afflicted with this disease have some tendency to a neurosis; that, in fact, "they are bound to die

by their nervous systems", and that hence they may transmit a slight taint; but, in many more cases, general paralysis has nothing to do with insane inheritance. "It is a disease of the active and over-energetic." Finally, as regards genius, Dr. Savage holds that the genius of insanity is more related to the imagination than to any other of our mental functions, especially the artistic and musical talents. He looks, moreover, upon precocity as the quality most allied to insanity, and believes in the truth of the old proverb, "A man at five, a fool at fifteen."

J. C. GALTON.

EARLE ON THE CURABILITY OF INSANITY.—Dr. Pliny Earle, Superintendent of the Northampton (Massachusetts) State Hospital, in an article upon this subject (*American Journal of Insanity*, April 1877) examines numerous reports of institutions for the insane, and states that favourable deductions have been made from them, which are not conclusive. Towards the close of his article, he summarises in the following words.

1. The reported recoveries from insanity are increased to an important extent by repeated recoveries from the periodical or recurrent form of the disease in the same person, and consequently—
2. The recoveries of persons are much less numerous than the recoveries of patients or cases; and consequently—
3. From the number of reported recoveries of cases or patients, it is generally impossible to ascertain the number of persons who recovered.
4. The number of reported recoveries is influenced, sometimes largely, by the temperament of the reporter, each man having his own standard or criterion of insanity.
5. The large proportion of recoveries formally reported were often based upon the number of patients discharged, instead of the number admitted, and generally, upon the results in a number of cases too small to entitle the deduction therefrom of a general formula of scientific truth; and those proportions were evidently increased by that zeal and (for want of a better word) rivalry which frequently characterise the earlier periods of a great philanthropic enterprise.
6. The assumed curability of insanity as represented by those proportions, has not only not been sustained, but has been practically disproved by subsequent and more extensive experience.
7. The reported proportion of all cases received at the institution for the insane, has been constantly diminishing during a period of from twenty to fifty years.

#### RECENT PAPERS.

- On Cranioscopy and Craniometry in the Pathology of Diseases of the Brain. By Dr. M. Benedikt. (*Berliner Klinische Wochenschrift*, August 6.)  
 On Clinical Examination in Mental Disease. By M. Magnan. (*Gazette Médicale de Paris*, September 20.)  
 The Hallucination of Persecution. By M. Magnan. (*Gazette Médicale de Paris*, October 20, et seq.)  
 Agoraphobia. By M. Legrand du Sault. (*Gazette des Hôpitaux*, Nov. 13 and 20.)

#### DERMATOLOGY.

ROBINSON ON POMPHOLYX [CHEIRO-POMPHOLYX (HUTCHINSON): DYSDROSIS (TILBURY FOX)].—The disease described by Mr. Hutchinson as cheiro-pompholyx, and by Dr. Tilbury Fox as dysidrosis, has been made the subject of a special clinical and histological study by Dr. A. R. Robinson (*Archives of Dermatology*, July 1877). The author, who had been shown cases of the affection in London by Dr.



Fox, recognised it in New York; and, selecting a well-marked case, he excised portions of the skin for microscopic examination.

The patient, a delicate man, was first severely attacked in July 1871, when 25 years old. The vesicles and bullæ began on the hands, being present on the palmar surfaces and sides of the fingers. They appeared on the soles of the feet a month afterwards. The attack lasted about two months. The second severe onset occurred in February 1877, and he had not recovered at midsummer when Dr. Robinson wrote his memoir.

The eruption of the vesicles was preceded for some hours by sensations of burning and tingling in the part, and they appeared singly or in groups. They were frequently observed to be symmetrical, appearing on exactly corresponding parts of the hands or feet at the same time.

The contents were shown by chemical tests to be in the early stage pure serum, whilst in the later stages an increasing number of white blood-corpuscles were found. The vesicles are formed by exudation of serum from the blood-vessels of the papillæ, each vesicle corresponding to a subjacent papilla. The exuded fluid pushes its way between the deeper cells of the mucous layer of the epidermis, and accumulates in the more superficial layers in spaces formed by pressure on the surrounding cells. Several of these vesicles unite to form bullæ, the lateral pressure of the fluid meeting with less resistance than that towards the surface. "The sweat-glands were found to be perfectly normal, and there was no distension whatever of their ducts with sweat. In one case the sweat-duct was the principal structure separating the vesicles and delaying their union." The hypothesis of Dr. Tilbury Fox that the vesicles are formed by retained sweat, being thus disproved by facts, Dr. Robinson proposes that the term *dysidrosis* should be definitely rejected. As the disease attacks the feet as well as the hands, the term *cheiro-pompholyx* is not admissible, but the author, "recognising Mr. Hutchinson's claims, and also the fact that the term pompholyx has not been employed by any recent writers to designate any skin-disease, the term pemphigus being employed instead of it, has chosen to name it simply pompholyx".

[The memoir contains several excellent engravings illustrating the morbid appearances. Now that the disputed point as to the pathology of the disease is settled by observation, the suggestion of the simple and unambiguous term proposed by Dr. Robinson will, it is to be hoped, be favourably received.—*Rep.*]

**ROBINSON ON SYCOSIS.**—Dr. Robinson (*New York Medical Journal*, August and September 1877) excised portions of living skin affected with sycosis, and examined them microscopically. Contrary to the ideas hitherto entertained regarding the nature of this disease, he has found that the inflammation is not primarily in the hair-follicle, but external to it. "It is not a folliculitis, but a perifolliculitis, pure and simple. The serum exuded from the vessels surrounding the follicle penetrates the sheath, and finally the sheaths rupture, and pus cells, having their origin as white blood corpuscles are found clustered round the hair. The cells of the external and internal root-sheaths undergo destructive changes, the cell-bodies and connecting substance are gradually destroyed, and a granular-looking mass, containing roundish bodies (the nuclei of the former cells) is formed. There is usually no purulent infiltration of the root;

the appearance of pus cells is deceptive, the round cells seen in the broken-down granular mass are the nuclei of the normal cells of the part." The pus does not pass to the surface between the hair-shaft and the follicle-sheath, as stated by Wertheim, but reaches the surface by breaking through the Malpighian layer. The cells surrounding the hair-papilla resist the inflammatory process longer than the other cells of the bulb, a circumstance which, the author believes, explains why permanent alopecia does not follow more frequently. Subsequently the epithelium of the sebaceous glands also undergoes destructive changes.

Dr. Robinson accounts for the phenomena of this perifollicular inflammation, by the irritation of the stiff hairs of the beard on a skin already inflamed by eczema, heat, dusty substances, shaving, irritating powders, cosmetics, etc. Its limitation to the beard is explained by the stiffness of the hairs, and the discrete arrangement of the papules by the fact that the older and stiffer hairs irritate more powerfully. The succession of outbreaks is due to intervals of more or less irritability of the cutis. He proposes the name *tinea barbæ* for the distinct and readily diagnosed disease usually called parasitic sycosis, as being less likely to produce confusion. This latter disease, being due to the growth of a fungus in the hair-sheath which produces appearances that can be distinguished by the naked eye, should be entirely separated in nomenclature from sycosis, or perifollicular inflammation of the skin of the beard.

In the treatment of sycosis, Dr. Robinson recommends the beard to be cut, and not shaved, as is practised in Vienna. Otherwise his treatment is essentially that laid down in Hebra's text-book.

**CAMPBELL ON THE RELATIONS EXISTING BETWEEN ECZEMA AND PSORIASIS.**—Dr. Robert Campbell (*Archives of Dermatology*, July 1877) relates the history of several cases in which eczema and psoriasis were diagnosed as co-existing, and others in which the same persons had eczema at one time and psoriasis at another. He infers an intimate relation between the diseases.

**BEHREND ON ERYTHEMA MULTIFORME UNIVERSALE.**—Behrend (*Archiv für Dermatologie und Syphilis*, 1877, 3 Heft) gives the history of a case of this disease, in which, along with an abundant and characteristic eruption in the usual sites, there were present the nodules of erythema nodosum on the legs, and erythematous patches on the mucous membrane of the mouth. The patient was a woman 25 years old, who had borne two children, and at the time of the seizure was acting as wet-nurse. There had been painful fissures of the nipples, but no symptoms or history of syphilis. In nine days the eruption had entirely vanished. G. THIN, M.D.

#### RECENT PAPERS.

- On Anæsthesic Mutilating Leprosy. By Dr. Thaon, of Nice. (*Le Progrès Médical*, November 10.)
- On Ringworm of the Head and its Management. By Dr. Tilbury Fox. (*Lancet*, November 10.)
- On Lupus. By Dr. Lailler. (*La France Médicale*, November 17.)
- On the Treatment of Porrigo Decalvans by Croton Oil. By Dr. Cadet de Gassicourt. (*Bulletin Général de Thérapeutique*, November 13.)
- On the Etiology and History of Leprosy. By Dr. Munro. (*Edinburgh Medical Journal*, November 1877.)
- On Pityriasis Capitis and Pityriasis Alopecia. By M. Malassez. (*Le Progrès Médical*, November 24.)

## REPORTS OF FOREIGN SOCIETIES.

### IMPERIAL ROYAL MEDICAL SOCIETY OF VIENNA.

October 19. *Artificial Vocal Apparatus*.—Professor Störk showed a patient, the subject of narrowing of the larynx resulting from syphilis, for whom he had contrived an artificial vocal apparatus.

*Poisoning by Arsenic*.—Professor E. Ludwig made some remarks *à propos* of the case of a woman aged 63, on whom Professor Hofmann had made a *post mortem* examination, and in whom chronic arsenical poisoning was suspected, and ultimately proved by chemical research. She had been for some time occupied in the manufacture of ornaments for graves, formed of green-coloured moss and artificially coloured flowers; she had made about two thousand in the course of three months. On examination, it was found that the red flowers were coloured with fuchsine, which contained a relatively large quantity of arsenic. Professor Ludwig also examined six specimens of fuchsine; in one only, supplied from a Frankfurt manufactory, was arsenic not present. On examination of the woman's body, arsenic was found in the liver, spleen, kidneys, and stomach, but not in the bones, nor in the urine contained in the bladder. Dr. Ludwig made some experiments on dogs, in order to ascertain how far arsenic was to be found in the bones in acute and chronic poisoning. In some of the animals death was rapidly caused by large doses (45 grains) given at once, while others were slowly poisoned by having small doses given daily. In all the animals, arsenic was found in every organ and in the urine. If arsenic were given in small doses for a fortnight, and then omitted for three weeks, it could not be found in the bones nor in the urine. The liver contained a large quantity.

*Calcification of the Lung*.—Dr. Hans Chiari described the case of a woman aged 27, who had died in the Rudolf Hospital in the preceding week. She had suffered for six months from cramp in the stomach, with frequent vomiting, and had gradually become emaciated. Dr. Mader diagnosed narrowing of the pylorus by cancer or by the cicatrix of an ulcer, dilatation of the stomach, etc. At the necropsy there was found narrowing of the pylorus, caused by the cicatrix of an ulcer. The right lung presented whitish grey indurated masses, breaking down with difficulty under the finger; when cut, they crackled, and serum escaped from them. On the addition of sulphuric acid, the masses were rapidly dissolved, and needle-shaped crystals of sulphate of lime were formed. In short, the case was one of that rare affection, calcification of the lung, and Professor Ludwig had found that there was an unusually large amount of phosphate of lime (nearly 14 per cent.). The left lung also contained some calcified masses. There were no pleural adhesions. Both kidneys contained, both in the cortical and in the medullary substance, numerous white calcareous particles accumulated in and around the urinary tubules. There were none in the stomach and intestines, and the bones presented no abnormal appearance. With regard to the cause, Dr. Chiari could arrive at no positive decision. There was no evidence of previous chronic inflammation of the lungs, and the lung-tissue was not altered, otherwise than by the calcareous deposit. It was not probable that the inhalation of lime-dust

was a cause, as it would not be distributed as it was in the present case; and the quantity accumulated was too great. If, finally, the existence of a general dyscrasia were assumed, the exceptional distribution of the calcareous deposits and the absence of any change in the bones were remarkable.—Dr. Bamberger thought it most likely that the lime was introduced from without. In cases of inhalation of the dust of coal or metal, the substances were not equally distributed through the lungs, but were accumulated in individual portions. The accumulation of the calcareous matters in the great excretory organs, the kidneys, appeared to favour this hypothesis.

October 26. *Atrophy and Hypertrophy of Muscles*.—Professor von Bamberger showed a patient who was the subject of muscular hypertrophy, combined with muscular atrophy. He observed that these conditions co-existed, and that in both in fact there was atrophy of the muscles, the so-called hypertrophy consisting in a compensatory development of an excess of fat and connective tissue. The disease had also been described as pseudo-hypertrophy of muscles, fatty atrophy of muscles (atrophia musculorum lipomatosa), etc. The case described was that of a boy aged 14. Nothing could be ascertained regarding the origin of the disease, and he did not appear to be the subject of any hereditary affection. Since his fifth year he had complained of gradually increasing pain in the limbs. On examination, the muscles of the shoulder-girdle, especially the pectorals and serrati antici majores, were found to be greatly atrophied. Some of the muscles, however, as the deltoids and the extensors and supinators of the forearm, were unusually large. The most remarkable appearance, however, was the increase in mass of the muscles of the lower limbs, especially in the calves. The patient, however, could neither stand nor walk; and the movements of the upper limbs were greatly limited in all directions. The electric irritability of the muscles to both forms of current was lowered. Some of the hypertrophied muscles were soft, while others felt firm, probably in consequence of predominance of the connective tissue over the fat. There was considerable lordosis of the lower parts of the spine, probably caused by the disturbance of the centre of gravity of the body by the excessive increase of the mass of muscular tissue in the posterior periphery. The skin was mottled and cold, but presented nothing abnormal.

November 2. *Vaso-dilator Nerves in the Posterior Nerve-roots*.—Professor Stricker made some remarks on a recent essay of M. Cossy on the vaso-dilator nerves in the posterior nerve-roots. M. Cossy had made experiments on dogs in M. Vulpian's laboratory in Paris. He had divided the posterior roots of the sciatic nerve and applied electricity, and not, as Professor Stricker had expressly recommended in his published work, mechanical irritants. This quite explained the difference in the results obtained by the two observers. M. Cossy, who had operated on two dogs only, was sometimes able to produce dilatation of the vessels, sometimes not, notwithstanding that the irritation at the same time produced changes in other parts (the spinal cord and ganglia of the roots); while Dr. Stricker, using mechanical irritation, which was not transmitted to other parts, never failed to demonstrate dilatation of the vessels in more than sixty experiments which he had performed on ten dogs.

*Ventral Hernia*.—Dr. Jurié showed a man who had a ventral hernia. It was probably due to excessive bodily exertion, as well as to violent efforts



to discharge urine, he being the subject of a stricture of the urethra.

*Echinococcus of the Liver.*—Professor Schrötter showed a man aged 32, who had a roundish elastic tumour in the region of the liver. It first appeared fourteen years previously. He gave his reasons for the diagnosis of hydatid, and said that he believed puncture, followed by iodine injection, was the best treatment.—A discussion followed, in which the President (Professor Stricker), Dr. von Dumreicher, Dr. Dittel, Dr. Rabel, and Dr. Störk took part. Cases of hydatid of the liver were related, in which puncture was followed by suppuration, while in others the diagnosis of hydatid was held to be incorrect, since the tumours altogether disappeared under mercurial inunction. The danger of exploratory puncture was also mentioned, and was said to be especially great when the cysts were lined with the parenchyma, on account of hæmorrhage. This was said to be frequent in cystic bronchocele; but Dr. Störk, who had had much experience in the matter, denied the correctness of this statement. As far as he knew, puncture of a cystic bronchocele had been followed by death in one case only.—[It appears, from a remark in the *Allgemeine Wiener Medizin. Zeitung*, that echinococcus disease is extremely rare in Austria. In the Vienna General Hospital hydatid (of the liver?) was found, *post mortem*, in one case only out of 20,000; in the Wieden Hospital there was only one case in 6,000, and in the Rudolf Hospital one in 6,500. The last was recognised and treated during the patient's life.]

November 9. *Cyst of the Liver.*—In connection with Dr. Schrötter's case, described at the previous meeting, Professor Dumreicher showed a rare specimen, which he had possessed since 1854. It was taken from a girl aged 19, who had a large cyst of the liver, which was successfully treated by puncture and injection. She soon afterwards died of peritonitis, from the bursting of a second cyst internally.

*Resection of Nerves for Neuralgia.*—Professor Weinlechner showed a woman on whom he had performed resection of the inframaxillary nerve within the mouth, and also of the lingual nerve, on account of severe neuralgia of the fifth nerve. The neuralgia was completely relieved, but there still remained paralysis of sensation and taste on the right side of the tongue.

*Pirogoff's Operation for Club-Foot.*—Dr. Weinlechner showed a patient on both of whose feet he had performed Pirogoff's operation, on account of a high degree of club-foot. In both instances he had fixed the os calcis to the bones of the leg by means of pegs, and thus produced ankylosis. Unfavourable circumstances delayed healing for two months in one foot and for three months in the other: and, while the plastic result was good, the function of the limb was not restored, though improvement was to be expected. There was still much tenderness in the heel.

*Acne Rosacea.*—Professor Hebra reported two cases of acne rosacea in which he had sliced off the excrescences on the nose by means of a knife. The result, as the plaster casts which were exhibited showed, was fairly satisfactory.

*Hydatid of the Liver.*—Professor Schrötter reported that puncture had proved the presence of echinococci in the hepatic cyst described by him at the previous meeting.

*Growths in the Trachea.*—Professor Schrötter showed a woman aged 53, who had had a cough for a year, and for some months had suffered from

severe dyspnoea. This depended on the presence of numerous growths which occupied the trachea from the fourth ring downwards; at about the eighth ring the laryngoscope detected an uneven swelling, nearly obliterating the lumen of the air-tube, moving up and down with each respiratory act, and rubbing against the anterior wall of the trachea. Breathing was rendered possible by a clear space being left when the tumour was carried downwards. Further down there was another tumour, without doubt larger, of which, however, in consequence of being hidden by the upper swelling, only a small part was visible for an instant. The patient was an instructive example of what had been often pointed out by the author, that considerable changes in the air-tubes are borne well if they come on gradually. In such cases the patients can undergo exertion (walking or ascending stairs), which they would be thought scarcely able to bear. Dr. Schrötter regarded the swellings as cancerous, and intended to remove them as far as possible.

*Radical Operation for Hernia.*—Dr. Hofmokl showed a young man on whom he had two months previously performed a radical operation for inguinal hernia, using Lister's antiseptic dressing. The result was perfectly satisfactory.

*Dislocation of the Hip in Children.*—Dr. Hofmokl showed three children, the subjects of congenital or acquired dislocation of one or both hip-joints. One case was that of a child aged 4, who, two years previously, fell out of bed, and was seized by the mother by one foot, which produced the dislocation. Dr. Hofmokl intended to try forcible rupture; and if this did not succeed, to perform resection. In all the cases almost nothing had been done, but on the whole the condition had improved, the children being able to walk better from year to year, by means of shoes specially made for them.

*Arthritis Uratica.*—Professor Heschl described the result of a necropsy, made on the body of an elderly man who had died of cancer of the peritoneum. In the knee-joint and the smaller joints of the foot, both in the articular cartilage and in the surrounding tissues, were found numerous white deposits, which, under the microscope, presented needle-shaped crystals, arranged in little masses. Chemical examination, however, detected, not urate of soda, as in true gout, but phosphate of lime and magnesia. In answer to an inquiry by Dr. Heschl, Professor Skoda had told him that he had never seen a case of arthritis uratica. Dr. Heschl then communicated with Dublin, from which place two preparations were sent to him—viz., an astragalus, the articular surfaces of which were covered with a white almost porcellaneous layer, and two phalangeal joints, having a similar deposit. In these specimens the murexide test detected the presence of urate of soda. He thought that these specimens would be valuable additions to the museum.—Professor von Rokitsansky regretted that Dr. Heschl was not yet acquainted with all the treasures accumulated in the Pathological Museum of Vienna. There were preparations of a case which he had examined thirty years ago, and in which the cartilages of almost all the joints were coated with a porcelain deposit, in which urate of soda was found in large quantity.

November 16. *Primary Sarcoma of the Lung.*—Dr. Chiari showed a specimen taken from a girl aged 14, who had died in the Crown Prince Rudolf Children's Hospital. As far as could be ascertained, she had never had any serious illness. She was admitted to hospital with erysipelas of the face; the

attack was apparently cured, but œdema of the face and limbs suddenly appeared, and she died on the fifth day with œdema of the lungs. The urine contained albumen, and there was slight dulness over the apices of the lungs. At the necropsy, the right heart was found somewhat enlarged. The left lung was universally adherent, and the right, in a great part of its extent, very firmly so, especially the upper lobe. The upper lobe of the right lung contained a hard globular tumour, having no very distinct boundary. It was readily divisible into layers, and consisted of fasciculi, formed entirely of slender spindle-cells. In nearly every section through it canals and passages were seen, which were lined with ciliated epithelium, and were evidently the remains of bronchial tubes; there were also dark pigment and gritty corpuscles. The presence of the latter at first led to the supposition that portions of the tumour had become calcified. This, however, was not the case, as microscopical examination showed that the calcification affected the septa only, so that not the sarcoma, but the lung-tissue and its vessels, had undergone the change. No similar growth was found, on careful examination, in any other part of the body.

*The Diagnostic Value of Epithelium in the Sputa.*—Dr. Heitler read a paper on this subject, in which he opposed the statements of Buhl, Aufrecht, Niemeyer, Rühle, and others, that characteristic pulmonary epithelium is always found in the sputa of phthisical patients, so that microscopic examination of the expectoration is an important aid in diagnosis. He stated, as the result of numerous observations, that, on the contrary, the epithelium supposed to be diagnostic of phthisis was also to be found in other diseases of the lung. On the other hand, in doubtful and difficult cases, the sputa failed as a means of diagnosis. The author's view agreed with that of Fischl, who had recently insisted on the difficulty of recognising the epithelium of the pulmonary alveoli in phthisical sputa, and with that of Biermer, according to whom the origin of the epithelial cells in the sputa could only be guessed at from their form and size. Dr. Heitler described in detail the principal cell-formations found in sputa (pavement-cells, ciliated epithelium, fat granule-cells, pigmented cells, etc.), and expressed his opinion that they were of no diagnostic or prognostic value.

*Endoscopic Examinations in Urethral Blennorrhœa.*—Dr. Grünfeld gave an account of the results which he had obtained by endoscopic examination in cases of gonorrhœa in early stages. 1. *Urethritis blennorrhœica (acute blennorrhœa).* The urethral mucous membrane is covered with pus, and appears in the endoscope in the form of distended semi-globular elevations, moderately reddened, and often bluish or dark red. Mechanical irritation of the mucous membrane readily produces bleeding. The usual situation of the disease is the anterior part of the urethra. 2. *Urethritis membranacea.* Here there is generally œdema of the prepuce, and the freshly passed urine usually contains fine leathery membranous masses. The endoscope shows that there is pus, but less than in the previous form; the mucous membrane is not red, but covered with an extensive layer of whitish grey exudation, firmly adherent, and not removable without causing hæmorrhage. After a few days the mass of exudation is thrown off, and the appearance of urethritis blennorrhœica is presented. 3. *Urethritis simplex.* In this, large masses of pus are formed, but the swelling of the mucous membrane and the hyperæmia are not

so great as in the first form. 4. *Urethritis granulosa.* This form has been mostly described by Désormeaux. The mucous membrane is but little covered with pus, but is arranged in three folds of a somewhat dark red appearance, uneven, velvety, and here and there presenting punctiform elevations. 5. *Urethritis with ulceration.* To this class belongs herpetic urethritis, in which, at a distance of three-fourths of an inch to an inch and a half from the orifice, are found small shallow ulcers, distinguishable only by their grey colour from the surrounding reddened mucous membrane. This form of the malady is rare, and occurs only in persons who have herpes præputialis. Dr. Grünfeld only found chancrous ulcers at a small distance from the orifice; they presented the same appearance as on other mucous membranes. He had not been able to find catarrhal or tuberculous ulcers, or *plaques muqueuses*, in the urethra.

#### ACADEMY OF MEDICINE IN PARIS.

September 18. *Asiatic Cholera.*—M. Briquet read a report on papers relating to Asiatic cholera, and particularly on those of M. Decaisne and M. Pettenkofer, which treat of the telluric origin of this disease. This theory originated with M. Fourcaud, who in 1849 asserted that the composition of the ground had a certain influence on the propagation of cholera epidemics. Everything which has since been said in this direction is contradicted by facts. In localities placed in identical telluric conditions, the scourge behaves quite differently; and if its ravages are more frequently noted in alluvial lands, is this not simply because these lands are more widely spread than others? Some have even gone further, and have wished to show that the soil itself plays a part in the etiology of cholera. Here also the facts are not in conformity with the theory; and, besides, beyond the confines of India, where the cause of the existence of cholera is well known, the spontaneity of cholera is not positively established. There are diseases which depend on certain characteristics of the soil, such as intermittent fever, but their progress is quite different. —M. J. Guérin did not, any more than M. Briquet, admit the telluric doctrine of cholera, but he was not opposed to its propagation by contagion, and persevered in believing in its spontaneity in Europe, and especially in France.

*Tænia Mediocanellata or Inermis.*—M. Rochard read a note on the frequent occurrence in Syria of the tænia mediocanellata or tænia inermis, and of the presence of the cysticercus, to which it owes its origin, in the muscular tissue of the cattle of that country. These researches already allowed the rectification of the medical geography of the tænia. Leaving the North of Europe to the botriocephalus, the tænia solium is almost exclusively found in countries where swine's flesh is eaten nearly raw. It prevails along with the trichina, and for the same reason this occurs in Germany. In France the tænia inermis is frequently found, since debilitated patients have been fed on raw flesh; and it is met with, to the exclusion of every other species, in Mahomeddan countries, where swine's flesh is held in abhorrence.

September 25. *Salicylic Acid.*—M. Bouchardat and M. Sée laid stress on the fact that the state of the kidneys should always be ascertained before administering salicylate of soda, this drug having a special eliminative action. It is true that in articular rheumatism renal changes are rare, but it is not so



in gout; and it is in this disorder that precautions must be taken.

*The Function of Alkalies in the Animal Economy.*—M. Mialhe read a paper on this subject, in which, after having pointed out the necessity for a certain proportion of alkalies in the organism for the equilibration of the chemical reactions which there go on, and recapitulated their function in the oxidation of organic matters, he endeavoured to demonstrate that the alkaline bicarbonates, administered in large doses, cannot give rise to what has been termed alkaline cachexia. He admitted that this may be the result of the caustic alkalies, which effect true solution of the albuminoid matters, but not of the bicarbonates of the alkalies, which only act as simple solvents, and which, according to the medical men at the various spas, far from being debilitating, are strengthening whenever they are used in any affection dependent on disturbance of the digestive functions. Besides, according to M. Mialhe, it would not be possible to alkaline oneself at will, though later on he added that one can do this to a certain degree; and that amount is sufficient to facilitate digestion, oxidation, and assimilation of food. He afterwards insisted on the special action exercised by the alkalies on the proteic matters as solvents—an action which gives them a salutary influence in all the organic actions connected with assimilation and disassimilation. He concluded with some remarks on the posology of bicarbonate of soda, of which he preferred rather excessive to very small doses. This, however, depends on the individual patient, his social condition, and manner of living. According to M. Mialhe, it is advisable to administer at once the maximum dose which it is intended to prescribe during the whole duration of the treatment.

*Flatulent Dyspepsia.*—M. Leven read a paper on the gases of the stomach and intestines, and on flatulent dyspepsia. He concluded, from his experiments, that the gases arise from three sources—the air, the blood, and the fæcal matters, and that the food does not participate in the formation of the gaseous contents of the digestive tube. Clinical researches show that flatulent dyspepsia does not appear until long after the appearance of stomachal dyspepsia. The gases are no longer expelled from the rectum, but are repelled towards the mouth by an antiperistaltic contraction of the intestine, on which an irritated stomach of long standing reacts from afar. It is no longer a question of diminishing the quantity of the gases; they will disappear when the stomachal dyspepsia is rationally treated, because the antiperistaltic contractions will cease.

October 16. *Alkaline Cachexia.*—M. Gubler protested against the interpretation which might be given to M. Mialhe's memoir on alkalies—an interpretation which would regard alkaline cachexia as a chimera. One cannot alkalinise oneself at pleasure, M. Mialhe had said, and he had cited facts relating to some persons who had been able to take large and long continued doses of alkaline salt. These were, however, rare exceptions. Huxham relates, on the other hand, the history of a gentleman who acquired the habit of eating carbonate of ammonia like sugar, and at last died in a scorbutic condition, with that dissolved condition of blood named by M. Gubler, a plastic. Though less rapid, the effects of bicarbonate of soda were not less real, and its characteristic of being a normal constituent, did not remove anything from its hurtful properties. Besides, the serum might easily become alkaline with excess if the kidney acted badly. So soon as the kidneys filtered

badly, the accumulation of the doses become imminent; alkaline intervention is therefore specially to be dreaded in patients whose kidneys were becoming degenerated. Repeating before the academy what he had already said in his lectures on mineral waters in 1872, M. Gubler concluded by saying, "The waters of Vals or Vichy should not be reserved for plethoric patients only; invalids showing different conditions may derive benefit from them; their use is not contra-indicated by a certain degree of anæmia and debility, but it would be erroneous to proclaim the almost absolute innocuity of alkaline preparations." M. Pedow added that he has frequently observed robust persons at Eaux Bonnes who, not content with obtaining the diminution in frequency and in intensity of their hepatic calculous colics at Vichy, were desirous of thoroughly scouring themselves out; and to this end took alkalines to excess—that is to say, too much, or for too long a time. Many of these patients lost flesh, became palled, suffered from chronic pulmonary catarrhs, expectorating asthma, and, in more than one instance, tubercles. It then became necessary to excite, by the waters of the Eaux Bonnes, those affections, which had been but too thoroughly cured by the alkaline waters.

*Alcoholic Drinks.*—Dr. Lunier read a paper on the hygiene of alcoholic drinks. He concluded, from the study of a large number of documents, that it is in the departments which consume the largest quantity of alcohol, and especially the alcohol of commerce, that the largest number of accidental deaths due to drunkenness, and cases of drunkenness and alcoholic insanity, occur.

October 23. *Cerebral Localisation.*—In a paper entitled "Researches on the Motor Centres of the Limbs", M. Bourdon reported a certain number of cases relating to the question of cerebral localisation. Fourteen of the cases were instances of brachial monoplegia, in which all the characteristics of cortical paraplegia were met with. Necropsy demonstrated that the anatomical changes occupied a more extended cerebral zone than those which, according to MM. Carville and Duret, Charcot and Pitres, answered to the movements of the arm. Instead of being limited to the upper third of the ascending frontal convolution, and to the upper two-thirds of the ascending parietal convolution, they were found in the whole height of the ascending frontal, several points of the ascending parietal, and the parts nearest to these two convolutions, as the paracentral lobule. The great extent of this zone accounted for the instability of paralysis in cortical lesions; it also further resulted that the existence of paralysis limited to the arm, and of cortical origin, cannot furnish a precise indication as to the point of the cranium where the trephine ought to be applied. The question was whether there really exists in the human subject a cortical motor centre for the lower limbs, independent of that of the upper limbs. M. Bourdon had already remarked, while studying the facts of cortical changes in the brain, that in many of them hemiplegia was present, although the encephalic lesion occupied the same situation as in monoplegia of the arm. Physiological experiments had given reason to imagine that this was a question of extent of surface or depth; but clinical facts did not justify this inference. Cases of monoplegia of the lower limbs being too rare to allow the question to be judged, M. Bourdon cited instances of amputation and malformation of the lower limbs, whence it resulted that the movements of the lower limbs would be under the control of the most elevated portion of

the same zone appropriated to the movements of the upper limbs; for we know that amputation or the arrest of the development of one limb brings on atrophy of that portion of the brain devoted to its innervation. As to the motor centre of the face, the preceding observations confirm its localisation at the posterior extremity of the second frontal convolution, and at the part of the ascending convolution which is nearest to it. Whilst fully recognising the importance of these researches from the diagnostic point of view, and the interpretation of functional troubles, M. Gosselin maintained the reserved points which he formulated at the meeting of April 3 (see *London Medical Record*, for June), on the indications for trephining when there is neither wound nor fracture; and on the efficacy of the carbolic acid dressing as a preservative against the meningoencephalitis consecutive on trephining. M. Bourdon added, in reply to M. Gueneau de Mussy, that he never found the corpus striatum implicated in any of his numerous cases.

*Visceral Syphilis.*—M. Lancereaux read a note on a case of pulmonary syphilis, of which a translation is published at page 481.

October 30. *Disarticulation of the Hip.*—M. Verneuil read a paper on this subject. After having pointed out that, beyond the dangers inherent in the affections which necessitate this serious operation, and the traumatic accidents to which the large wound caused by it exposes the patient, the loss of blood is, above all things, responsible for early, rapid, and immediate death, and that the longest deferred deaths are usually due to septicæmia. He called attention, 1, to the most suitable plan for preventing loss of blood; 2, to the best method of dressing, so as to avoid septicæmia. Several expedients have been proposed to overcome the danger of hæmorrhage during the operation, such as extreme rapidity of operation, preliminary compression of the femoral artery, the use of the thermo-cautery, etc., which are often not suitable for application, and are insufficient. The best way of obtaining the object is, first to drive the blood contained in the limb back into the system by an elastic band, then to remove the thigh in the same way as if a large tumour were to be extirpated, by laying bare and tying the principal vessels before opening them. M. Verneuil has had recourse to this method since 1864, first in a disarticulation of the hip, and subsequently in the majority of amputations. It afforded excellent results in the hands of M. Rose of Zürich, in 1875. To prevent septicæmia and its various manifestations, it is essential to prevent the altered fluids from stagnating in the wound, and, if possible, to resist the changes in these fluids. To immediate union and the lateral oval method, which do not fulfil these conditions, the method of lateral flaps, and especially the anterior oval method, should be preferred. They give, at pleasure, a gaping widely exposed wound, in which any retention is impossible, and, on the other hand, every kind of antiseptic application is very easy. The three plans of dressing which are now striving for supremacy may be employed. However, as it is difficult to apply M. A. Guérin's cotton-wool bandage and Lister's antiseptic dressing, it is better to have recourse to the open dressing, with antiseptic local applications. M. Verneuil covers the wound with a series of small pieces of muslin dipped in water, and intended to remain for some days; over this permeable layer are applied shreds of lint, steeped in an antiseptic liquid, which may be renewed at will, or only freshly moistened with a sponge, spoon, or, better

still, with a spray-producer. By carrying out these conditions, he was successful in a disarticulation at the hip-joint. He had performed three previously, which had ended in death. He attributes the last success to the changes effected in the plan of operation and the dressings.

November 6. *Poisoning by Agaricus Bulbosus.*—In a report on a fresh communication from Dr. Oré, relative to poisoning by *agaricus bulbosus*, M. Gubler returned to the difference existing between strychnia and the principle of *agaricus*. M. Oré believed in their identity, and based his belief on 1, the similarity of the symptoms; 2, the identity of the lesions; 3, the identical behaviour of acetic tincture of *agaricus* and solution of strychnia in the presence of charcoal powder. But, in the first place, many agents which are totally dissimilar in their effects on living organisms, such as strychnia and aconitine, would be wrongly confounded in the same genus, if their behaviour with powdered charcoal were only considered. As regards the symptoms, strychnia does not produce any of the abdominal symptoms observed in poisoning by *agaricus*, not even in subacute cases. Finally, the anatomical lesions are far from being equivalent. Thus, after poisoning by mushrooms, the intestine shows ecchymoses, inflamed, softened, and ulcerated patches, such as are never met with in cases of strychnia poisoning. In the second part of his communication, M. Oré brought out the antagonism of chloral and strychnia; and also endeavoured to prove that chloral, if it be introduced into the veins at the proper time, in sufficient doses, repeated often enough, may overcome the effects of strychnine.

*Rabies.*—M. Proust read a paper on the various cases of rabies observed in France since 1850. The following were the principal facts brought out. The dog is not dangerous, except when it is under the dominion of the ferocious instincts which the disease has aroused in it. It is more treacherous when the sentiment of affection is still lively in it; when, its saliva being already virulent, the animal is more caressing than usual. The widely spread opinion that canine rabies is always and of necessity characterised by the horror of water, is absolutely false. Mad dogs have so little horror of water that they have been seen to cross rivers, to attack flocks of sheep seen by them on the other side.

November 13. *Diabetes Mellitus with Changes in the Pancreas.*—M. Lancereaux read a paper on two cases of diabetes mellitus. In these two cases a certain number of points in common were remarked, viz., rapid and considerable emaciation, general atrophy of all the systems, with perhaps the exception of the nervous system, insatiable appetite, unappeased thirst, excretion of a large quantity of urine and sugar, and death at the end of two or three years. At the necropsy, atrophy or even almost entire destruction of the pancreas, due to obstruction of Wirsung's duct and the accessory pancreatic duct, by numerous calculi of carbonate of lime, hypertrophy of the glands of the stomach, and of the duodenum, increase in the size of the spleen, and even of the lymphatic glands of the abdomen, and pulmonary lesions, were found. M. Lancereaux had found, in medical literature, ten similar cases, which he grouped according to the nature of the pancreatic change. Moreover, rapid decline with emaciation is a constant symptom; and it is worthy of remark that the emaciation and the voracity are symptoms of which the existence has been noted in animals in which the pancreas has been destroyed by physiologists. There is, therefore, reason for making re-



searches as to whether there is not a causal relation between serious changes in the pancreas and that form of diabetes which is distinguished by a relatively sudden commencement, and especially a rapid evolution.

*Manganese in the Blood.*—In a note on the determination of manganese in the blood, M. Riche made known a new method for determining the extremely small proportion of this metal. This method is based on the decomposition of the salts of manganese by one or two elements of the galvanic pile. In a liquid containing 1 milligramme of manganese, a very noticeable deposit of binoxide of manganese is formed. In 1 milligramme of bullock's blood, 458 milligrammes of iron and 2 milligrammes of oxide of manganese have been found. Experiments on human blood are up to the present time too few to afford absolute conclusions, but it is certain that it only contains a very small proportion of manganese.

#### ACADEMY OF SCIENCES IN PARIS.

August 6. *Cerebral Localisation of Language.*—M. Bouillaud sent a communication on localisation of the cerebral centres which regulate the co-ordinate movements of both articulate and written language. According to the author, the co-ordination of movements necessary to these two expressions of thought exists in the brain; the so-called writer's cramp consists in a change in the brain-matter. He believed himself in a position to suppose that the co-ordinating centre of language should be found in the convolutions of the anterior lobes.

*Ovaries.*—M. L. de Sinéty presented a communication on the state of the ovary during pregnancy. According to M. Coste, the corpora lutea of the ovary cease to show any particular appearances after the fourth month of pregnancy. According to M. Sinéty, microscopical examination not only reveals modifications in the corpora lutea arising from the ruptured follicle, but also in the adjacent follicles. M. Sinéty afterwards gave a study of the corpora lutea of pregnancy after the second month of gestation. He found that gradually the hypertrophy of the reticulated lymphatic tissue becomes more defined; and that, in a woman at her full time, the fibrous tissue is only represented by a small central nucleus, and three fourths of the corpus luteum are then constituted by the lymphatic tissue. The same special characteristics are found in the occluded follicles. The cavity becomes gradually obliterated by the formation of mucous tissue, as in the unimpregnated female. But there also the zone of reticulated tissue has undergone hypertrophy, considerable in proportion to the advanced condition of the pregnancy. It is therefore this gradual hypertrophy of the tissues and the elements constituting the membrana propria of the follicle which characterises the corpus luteum, as well as the follicle occluded during pregnancy, and differentiates them from the same products in the unimpregnated condition. As to the mode of obliteration of the follicular cavity, it is the same in or out of pregnancy; formation of fibrous cicatricial tissue, dense and poor in cells if the follicle has expelled its ovule; production, on the contrary, of mucous tissue, rich in cellular elements if the follicle have become occluded without having expelled its contents. The number of occluded follicles seems larger in the female during pregnancy than in the unimpregnated state. Gestation, therefore, impresses on the female ovaries

quite a special character, which is not confined to the last follicle ruptured, and which might perhaps be observed in other organs, or in cicatrices formed on other points.

*Hæmoglobine.*—M. Malassez read a note on the quantity of hæmoglobine contained in the red corpuscles. In the adult male, 27.7 to 31.9 thousandths of a milligramme (.000415 to .000479 grain) of hæmoglobine to the corpuscles are found. In anæmia, a considerable diminution is found; the quantity of hæmoglobine varying from 10 to 25 thousandths of a milligramme (.00015 to .000375 grain).

August 13. *Cerebral Localisation of Language.*—M. Bouillaud continued his communication on the cerebral localisation of language. He replied to the objections which had been made to his theory by M. Ed. Fournié in his work on the cerebral nervous system. The objections and replies are as follows.

1. *Objection.*—Loss of speech from lesion of one side only of the brain does not prove that speech is localised in that side. It proves that both sides are absolutely indispensable to the formation of speech.

*Answer.*—The formula proposed by M. Bouillaud positively implies that the directing or co-ordinating principle of the movements of articulate language resides in the two anterior lobes of the brain. But if loss of speech from lesion of one side of the brain does not prove that speech is localised in that side, it still less proves that both sides are absolutely indispensable to speech, since there are innumerable cases in which power of speech is retained, though one of the sides of the brain is the seat of deep lesions.

2. *Objection.*—If the phenomena of sensibility and memory can supplement themselves in both hemispheres, it is not so with the excito-motor phenomena, which have an analogous duty on both sides, but distinct as to the seat of the result obtained. If one of the two hemispheres be wounded, the function is not performed.

*Answer.*—It does not follow that both hemispheres should necessarily act together in order that the result may be obtained, seeing that this result, viz., speech or articulate voice, on the contrary, is perfectly accomplished by one only of the two symmetrical halves of the body which are devoted to it.

3. *Objection.*—The material conditions of speech, considered as a sensory phenomenon, are found in both hemispheres.

*Answer.*—Speech thus considered is that which M. Bouillaud has designated by the name of *internal speech*, and which concerns everything relating to words; specially to the memory of them, and also to the remembrance of the movements necessary for their pronunciation.

4. *Objection.*—The material conditions of speech, considered as a phenomenon of motion, are indispensably found in both sides of the brain.

*Answer.*—The simultaneous action of both frontal lobes of the brain is not indispensable to the function of articulate language.

5. *Objection.*—Contrary to the opinion of MM. Broca and Bouillaud, it is not possible to admit that the material conditions of speech are localised in the third convolution of the left frontal lobe, notwithstanding the exactness and the authenticity of the anatomo-pathological facts on which this view is founded.

*Answer.*—M. Bouillaud's personal view is not as M. Fournié has formulated it. His view is that the anterior lobe of the brain regulates the movements necessary for articulate language. According to a great number of facts, observed with exactness, one lobe only suffices to regulate these movements; and, as a general rule, this is the function of the left lobe; but the right lobe is not

less adapted to govern them, which indeed happened in a certain number of cases specified by M. Bouillaud.

**Pyrophosphates.**—MM. Paquelin and Jolly presented a note on the pyrophosphates. According to their experiments, made on pyrophosphate of soda, it results that, far from being reconstituents, these salts are completely eliminated by the urine, of which they increase the flow. If pyrophosphates have given good results with regard to increase of strength, it is probably due to some unconverted residua of phosphoric acid retained by them.

**Geissospermine.**—MM. Bochefontaine and C. de Freitas presented a note on the physiological action of Pas Pereira (*Geissospermum leve* of Baillon.) Geissospermine is a toxic principle which does not seem to exercise any local irritant action, so as to interfere with its introduction by the hypodermic method. Two milligramme (.03 grain) doses injected under the skin killed a frog; half a milligramme (.0075 grain) is enough to produce paralysis; a dose of one centigramme (.015 grain) given hypodermically killed a full-grown guinea-pig weighing 668 grammes (nearly one and a half pounds); 14 centigrammes (two and a quarter grains) completely paralysed all the spontaneous movements in a small dog. Clinical observation has shown slowness of the pulsations of the heart, and diminution of arterial pressure, under the influence of this agent. The respiratory movements become less frequent. The voluntary movements are the first to cease. When the animals are motionless, and seem absolutely insensible—that is to say, when they do not show any manifestation of pain under the influence of various external stimulants—the reflex movements are not abolished. Thus geissospermine appears to act on the brain. The reflex movements are afterwards progressively abolished. Geissospermine certainly acts on the spinal cord, and on the medulla oblongata. In fact in frogs, from which the brain had been removed, and in which the spinal cord still retained its reflex power, it was found that this substance suppressed the reflex movements, just as in animals of the same kind still having their encephalon. The sensory nerves seem to retain their functions as long as the motor nerves. If the nutrient artery of the hind limb (common iliac) of a frog be tied, and geissospermine be introduced under the skin of a fore-limb, the limb of which the artery is tied is protected from poisoning; but stimulation of the sensory nerves, both of the poisoned and of the non-poisoned side, gives rise to reflex phenomena, which are absolutely identical. The excito-motor function of the nerves becomes extinct only when the animal has been inert and torpid for a certain time. Muscular contractility is not affected by geissospermine, for it still persists after the death of an animal poisoned by that substance. In conclusion, the active principle of *geissospermum leve* is a paralysing poison, which seems to have the power of suppressing the physiological properties of the central nervous grey matter, and particularly of the grey matter of the spinal cord.

**Bacteria.**—M. Toussaint communicated his experiments on blood containing anthracoid bacteria. The fresher the blood, the more poisonous it is. Further, when preserved from contact with the air, it retains its injurious properties during a time relatively brief, according as the temperature is high. It results from these facts that putrefaction and the absence of oxygen kill bacteria, and that they suc-

cumb the more quickly, according to the height of the temperature in which they are kept.

August 30. **Plague.**—M. Tholozan read a note on a third outbreak of plague in Bagdad. The writer allowed that this disease becomes endemic in that country, and that it appears at fixed periods, notwithstanding all the precautions taken against its invasion. In Persia fresh manifestations, which have made their appearance in foci of infection different from those of Mesopotamia, have been recorded.

August 27. **The Torpedo.**—M. Ch. Rouget communicated the results of fresh researches made by him on the termination of the nerves in the electric apparatus of the torpedo. In contradiction to the assertions of Ciaccio, Ranvier, and Ball, he had found that these nerves do not terminate in free extremities, but in networks with closed meshes.

September 10. **Sugar in the Liver.**—M. Claude Bernard made a communication on the mechanism of the formation of sugar in the liver. He reminded his hearers of the methods used by him to extract the glycogen, the hepatic sugar, and the hepatic ferment from the liver. By causing the hepatic ferment to act on the glycogen, it was found that there is an absolute resemblance between the action of these two substances and that which exists between starch and diastase in vegetables.

September 17. **Fermentation.**—MM. P. Cazeneuve and Ch. Livon presented a note on the ammoniacal fermentation of urine and spontaneous generation. According to these experiments, urine left in the bladder and protected from all external influences does not ferment, whilst the action of the germs contained in the air produces ammoniacal fermentation and bacteria.

October 8. **Cysticerci.**—A note by M. Redon communicated experiments on the ribbon-like development of cysticercus in the human subject. The writer swallowed cysts collected from human beings, and gave some to pigs and dogs. Man alone offered a nidus favourable to the development of these parasites, and yielded cucurbita. This proves that the *tænia solium* may proceed from a cysticercus, and that the cysticercus of man is not the same as that of the pig.

October 28. **Anthracid Blood.**—In consequence of MM. Pasteur and Joubert's communications on the innocuousness of filtered anthracoid blood, M. Klebs reported some similar experiments successfully made by him in 1871 and published in the *Schweizerische Correspondenzblatt*, Band i, p. 275.

**Blood-corpuscles.**—MM. J. Béchamp and E. Battier communicated some experiments confirming those made by M. A. Béchamp on blood-corpuscles. It results from them that the blood-corpuscles of all animals which have been examined show an envelope made visible by the action of soluble fecula. These corpuscles are not destroyed, but only rendered invisible by water, and they are found again even, after some weeks have elapsed, by the help of picrcarmine.

October 29. **Faradisation in Hydrophobia.**—M. Menessan presented a note on faradisation in a case of hydrophobia. It related to a young veterinary surgeon who acquired rabies by inoculation, and in whom the fits were calmed in a remarkable manner by continuous currents applied from the nape of the neck to the sole of the foot. Death, however, occurred two days afterwards, through arrest of the cardiac contractions.



## REVIEWS.

*Internal Urethrotomy, with its modern improvements.* By EDWARD LUND, F.R.C.S., Surgeon to the Manchester Royal Infirmary, and Professor of Surgery in the Owens College. Pp. 33. London: J. and A. Churchill, 1877.

The operative treatment of stricture of the urethra, particularly by means of internal urethrotomy, has of late years attracted much attention, both in this country and abroad. Much has been written on the subject, and many different forms of urethrotome have been invented and described, some of them cutting from before backwards, as Berkeley Hill's and Teevan's; while others are made to cut in the contrary direction as Civiale's, which, in a modified form, is preferred by Sir Henry Thompson. Some operators, again, prefer to cut on the upper wall of the urethra, while others cut on the lower; and in some instruments the strictured part is fixed before the knife is used, thus securing full and complete division of all the obstructing fibres. But whatever difference of opinion there may be as to the mode of operating, and the kind of instrument to be used, all are agreed that a cutting operation is only to be undertaken in structures beyond the penile portion, when simple dilatation has failed.

In the small work now before us, the author, besides discussing the operation of internal urethrotomy, relates very fully and minutely the history of a patient with stricture of extreme narrowness, and well shows how, by gentleness, patience, and skill, a case, apparently most unpromising, may be treated with success.

In the preliminary treatment of a narrow and tortuous structure where the smallest bougies have to be employed, Mr. Lund uses a gum-elastic tube which he passes down to the seat of obstruction. He then introduces the bougie through the tube, and, by careful manipulation, into the structure beyond; thus avoiding the lacunæ in the anterior portion of the urethra in which the filiform bougie is liable to become entangled. The long whalebone bougie having been passed into the bladder, a very fine silver catheter, perforated at its point, is slid over it. The catheter having arrived at the bladder, the bougie is withdrawn. A slender steel rod is then screwed on to the catheter, and by means of sliding tubes, as in Wakley's instrument, the stricture is dilated up to No. 3 or 4 of the English scale. The cutting operation may then be proceeded with or not, according to circumstances. The urethrotome recommended is that known as Teevan's, which is a modification of Maisonneuve's instrument, but which cuts on the upper surface, and in which the blade is protected by a shield when not in use. After the operation a metallic *bougie à ventre*, equal in size to No. 26 French, is passed, so as to stretch or tear through any fibres which may have escaped division by the knife. The bladder is then emptied by a catheter which is at once withdrawn, and the urethra left untouched for a period varying from three to five days, after which the metallic bougie is again used. Quinine and opium are to be given after the operation.

The importance of rest and mild purgatives in the preliminary treatment of stricture is also alluded to, as well as the desirability of not operating whilst any active urethritis is present.

In cases of urgent retention, where no instrument can be passed into the bladder, puncture above the

pubes is advised, followed by the insertion of an elastic tube or catheter through the cannula, to be retained until further progress in the dilatation of the stricture has been made.

For the full details of Mr. Lund's method, as well as for many hints likely to be useful in the management of different cases of stricture, the *brochure* itself should be consulted. It sets forth the results of the author's extended experience, and will well repay perusal.

ARTHUR COOPER.

*Excision of the Lower End of the Rectum in Cases of Cancer.* By JOHN B. ROBERTS, M.D., Philadelphia. 1877.

American monographs are often replete with interesting matter, and certainly this pamphlet of Dr. Roberts' contains some instructive facts and observations. He informs us that Faget in 1739 successfully removed an inch and a half of the whole circumference of the rectum, and that the patient recovered, and had control over the functions of defæcation, and, moreover, was able to retain flatus. This success would have justified a host of imitators, but the subject was left in abeyance until Lisfranc in 1826-28 operated on six patients with not too happy results, losing three or four of his cases by pelvic abscesses, pyæmia, etc. Dieffenbach says he operated on thirty cases, in most of which the disease did not return for many years. Those who have seen much of cancer of the rectum will be slow to accept this statement; one of the most common observations is the rapidity with which the malady returns even when it was comparatively limited, and has been thoroughly removed.

Dr. Roberts records a successful case operated on by Dr. R. T. Levis in the Pennsylvanian Hospital, when three inches in length of the whole circumference of the lower end of the rectum were removed with very little loss of blood, the vessels being ligatured as they were divided; the patient made an excellent recovery, the parts three months after being found on the whole in a very satisfactory condition, and the man much relieved generally.

The mode of operating chosen by Dr. Levis is that generally adopted in this country and in France, and a short description may be interesting. "The patient was placed in the lithotomy position, and a metallic bougie introduced into the bladder, to serve as a guide to the position of, and to steady the urethra; an incision was made from the base of the scrotum to the coccyx, encircling both sides of the anal orifice. The hand of the operator was then introduced behind the bowel into the hollow of the sacrum, in order to tear the rectum loose from its posterior attachments. By means of the finger and a pair of serrated scissors, Dr. Levis broke down the adhesions all round the rectum to the front, where it was more firmly attached, on account of the disease, to the prostate gland and neck of the bladder. The cancerous gut was next carefully dissected from these parts, exposing to view the prostate and the lower part of the bladder. While this was being done the vessels were carefully ligated as soon as divided, and double sutures were then passed through the rectum above the proposed line of excision. When the rectum, including the cancerous portion, had been thus isolated, the gut was drawn forcibly down by seizing the tumour, and scissors were employed to cut through the walls of the bowel; a section of the rectum three inches in length was thus excised." The question of how much rectum may be removed

with safety is discussed by Dr. Roberts, who gives an account of his original method of measuring the anterior and posterior peritoneal pouches; and he comes to the conclusion that about three inches and five-eighths of the lower end of the gut is free of peritoneum, and consequently may be removed without injury to that membrane. In his measurement he takes care, by dissecting the rectum from its surrounding attachments and drawing it down (as would actually be done in an operation), to efface the curves and reduplications; this gives about one and a half inches more for safe removal than has hitherto been conceded, and consequently places growths within reach which were formerly counted as extending too high up for interference.

This, of course, infers that the whole circumference of the gut is to be removed—an inference which may be conceded, as the excision of a portion of the circumference of the bowel is more likely to be followed by stricture and discomfort than when the whole circle is ablated.

Dr. Roberts quotes a table of thirty-three cases of Dr. Schmidt of Leipzig, in which it is stated that 20 patients were *cured*. It is quite clear that the cured cases could not have been long under observation. At all events, in England, cures of cases of cancer of any organ or variety are not common. Indeed Dr. Roberts himself says, "Suppose it is admitted that in the majority of instances the malignant process does finally recur"; and he does not distinguish the forms of cancer attacking the rectum: certainly they are not all epithelial. There can be no doubt that, in a fair number of instances, extirpation of a cancerous growth in the rectum is very desirable and practicable; that the whole disease must be removed to gain any satisfactory result; that the form of cancer most amenable is epithelioma; that the early stage is the time for operation; that when the glands are involved, or there is evidence of secondary deposits, the operation is not to be commended; that, to cut out, as in Nussbaum's case, four inches of the rectum, the prostate gland, the prostatic urethra, and a portion of the neck of the bladder, is not a proceeding likely to find much favour with British surgeons; that, when cancer commences at least two inches from the verge of the anus, as is very commonly the case, and extends then far up, the removal, if possible, would inflict such injury on surrounding parts as to afford the patient no prospect of recovery. Finally, while commending the paper of Dr. Roberts, it must be borne in mind that the dangers of circumferential rectotomy are not so small nor so few, nor are the results so uniformly constant and enduring, as the cases put forth by Dr. Roberts seem to show.

WM. ALLINGHAM.

*Hints on Insanity and Signing Certificates.* By JOHN MILLAR, L.R.C.P. Edin. Second Edition. London: Renshaw. 1877.

The welcome little volume supplies a want which has been long felt by students, general practitioners, and lecturers on insanity. It is an attempt to supply, in a condensed form, the most essential points in connection with psychological medicine, to those who have neither the time nor inclination to apply to the larger manuals on the subject.

In his preface to the second edition, Mr. Millar wisely points out the power, possessed by no other body, of depriving a subject of his liberty, and the inefficient means at present adopted to educate those who are to wield this formidable weapon.

It is to be hoped that from this work the licensing bodies may be induced to take a "hint," and institute proper examinations upon this important but much neglected branch of medicine.

Mr. Millar's division of the disease into two forms, curable and incurable, is the one which is slowly and surely being recognised by the best authorities. We cannot help observing, however, that dipsomania would have been better placed outside the pale of insanity. The symptoms, as well as the legal position of this malady, do not yet justify its classification amongst the subdivisions of real mental alienation.

With regard to treatment, Mr. Millar finds that a solution of opium and citric acid generally produces the desired sedative effect. A couple of eggs beaten up and mixed with some warm milk, ale, or porter may be given with a sedative every four hours, with the best results. Both of these hints are useful, but the Turkish bath appears to us to be a rather heroic remedy for a case of acute mania. On the whole, however, Mr. Millar's hints on treatment are very appropriate, and we are glad to find that he prefers the recumbent position for feeding with the stomach-pump. His mode of opening the mouth is also ingenious, by tickling the fauces with a feather passed behind the teeth; but we cannot approve of "a short conical notched wooden gag to keep the mouth open," when there are so many better contrivances for this purpose to be obtained from the instrument makers.

The hereditary tendency in some families to suicidal impulse, apart from mental disease openly manifested, and the necessity for watching such cases, is carefully dwelt upon. The diagnosis and treatment of general paralysis are concisely sketched, and the pathological appearances are attributed, perhaps correctly, to the mode of death by convulsions, and to the decomposition rapidly setting in in this disease. In treating epilepsy, we observe that Mr. Millar has not disregarded the important question of diet. He agrees in the main with Dr. Ireland and Dr. Merson, that a farinaceous regimen is desirable in these cases. We hope this subject will ere long be more fully investigated by some of our superintendents of public asylums. The remarks upon hallucinations are clear, but one-sided. Mr. Millar believes that these phenomena are invariably the result of physical causes; but we think it would have completed his review of the subject more fully if he had at least mentioned the theory that hallucinations are considered by some to be entirely due to the disordered fancy of the patient.

We cannot endorse the treatment recommended for masturbators, which, in certain cases, includes iron, and the application of caustic to the orifices of the ejaculatory ducts, although the remainder of this part of the chapter is sound and well written.

The section on the responsibility of the insane is clear and lucid, but we should advise the student to supplement it by reading the able article by Dr. Orange of Broadmoor, published in the *British Medical Journal* (13th and 20th October, 1877).

The sketch of the prevention of insanity is fair, but we prefer Dr. Blandford's paragraphs on this subject. Reference is made (p. 79) to the select committee on lunatics, held "some years ago". We should like to have seen it mentioned that the conclusion then arrived at (that there was no necessity for any inquiry at all) has been recently seconded by another committee, formed for a similar purpose. The statement that St. Luke's Hospital receives lunatics "free of



all expense" is hardly correct, although the advantages offered by that charity under its present able staff, Drs. Monro, Wood, Mickley, and Willett, are undoubtedly as great as those of many private asylums. The two hospitals, Bethlehem and St. Luke's, are said to reject idiots, epileptics, and incurable cases; but it may be remarked, for the benefit of students, that well marked cases of general paralysis are not unfrequently admitted to these asylums.

The suggestion as regards medical certificates, is one the commissioners in lunacy might adopt with some advantage to themselves and the public. "It would save much trouble and annoyance on this point if the certificate could be sent to the asylum for examination before the patient is taken there, so that any omission might be rectified." Perhaps the most useful part of the book is that which alludes to the mistakes commonly made in filling up these certificates. Here is given a list of facts, "so vague and irrelevant, that they had to be rewritten altogether." Dr. Bucknill's remark is here quoted, that "the acceptance of a certificate by the Commissioners in Lunacy affords no protection to the unlucky wight whose errors of assertion or omission come to be tested in the crucible of cross-examination."

The same eminent writer concludes his observations on this subject by saying "the proper filling up of half a sheet of paper, which may deprive a man of liberty, perhaps for life, is a professional act of which the importance cannot well be over-estimated". The legal documents which are most likely to be used by the profession in general, and the Scotch and Irish forms of order and certificates are added in an appendix. It is worth noticing that in Ireland the medical man is not called upon to state why he considers the patient insane when he fills up the certificate.

The book is clear and concise, and the selection of the most important points of the subject has been made with great care and consistency. We heartily recommend this little work to the notice of the busy practitioner.

H. SUTHERLAND, M.D.

*Traité du Diabète, Diabète Sucre, Diabète Insipide.*

Par le Dr. LECORCHÉ, Professeur agrégé à la Faculté de Médecine, Médecin des Hôpitaux. Pp. 703. Paris: G. Masson. 1877.

[*A Treatise on Diabetes, Diabetes Mellitus, and Diabetes Insipidus.* By Dr. LECORCHÉ, Professor to the Faculty of Medicine at Paris, etc. Paris: G. Masson, etc.]

The preface informs us that one of the chief objects of this book is to defend and to illustrate the theories and discoveries of Claude Bernard. It is not confined to the discussion of saccharine diabetes and glycosuria, justly considered by our author as two very distinct conditions; there is also an account of diabetes insipidus (azoturia and polyuria) in their various forms; there is thus a very close parallelism as to topics and treatment with the book on diabetes by Dr. Dickinson, lately reviewed in our pages. It would not be fair to compare the two works, because, though the topics are the same, their plan and construction are very different. Dr. Dickinson's is more clinical, and contains more morbid anatomy. It is also better fitted for members of our profession engaged in active general practice. The work before us is more chemical, more historical, and contains more pathology than morbid ana-

tomy. Both its plan and its execution render it a book almost indispensable to consulting physicians, and entitle it to a permanent place in their libraries. Both are excellent books, but each has its own special excellencies. Dr. Lecorché's book begins with normal glycogenesis. It treats of the blood and of urine, as both containing sugar in health, though the quantity in healthy urine is very minute, and goes on to deal with the liver, sugar, and glycogen. The second division of the work, beginning at page 47, deals with saccharine diabetes, commencing with the theories of causation. From page 71 to page 128, or upwards of 50 pages, are taken up with the various qualitative and quantitative tests for sugar. From page 128 to the end is taken up with the various forms of diabetes in their general and clinical aspects. There are nearly 40 pages of morbid anatomy relating to the various organs and tissues. To show how fully the chemistry of the subject is discussed, it may be noted that nearly 20 pages are occupied with the methods of determining the quantity of urea passed in azoturia and other forms of renal disease or disorder. Lastly, about 60 pages are devoted to the consideration of polyuria. Under each subject the experiments of not only Claude Bernard, but of all the principal writers and investigators of these diseases, are detailed and discussed. The book would be worth buying for the bibliography alone, contained in the footnotes. These references are not confined to French, British, or American authors. Those of Germany, Spain, Italy, and Scandinavian are also included. We cannot but think that the old reproach against French medical authors, that they read no books save those written by their own countrymen, if it were ever true, can no longer be maintained. All the best and most recent publications of the French medical press bear witness to the extent and catholicity of their writers' literary researches. Without pretending to decide on the literary merits of our author's style, it is simple justice to M. Lecorché to say that he writes clearly and pleasantly on all the topics discussed.

W. BATHURST WOODMAN.

*Transactions of the Medical Society of the State of California, 1876-77. Sacramento. 1877.*

We welcome with pleasure this seventh volume of the Transactions of the Medical Society of the Golden State; it testifies to the healthy vigour of our profession in what seems to us a very out-of-the-way part of the world, yet which seems capable of producing work comparing not unfavourably with that of our own provincial medical societies. The present volume contains reports on medicine, surgery, obstetrics, medical education, public hygiene and State medicine, histology and microscopy, and diseases of women and children. There are, besides, thirteen original papers, chiefly upon surgical subjects. Of the contributors, two, we notice, are ladies. Dr. C. B. Brigham, of California, publishes two successful cases of excision of the hip-joint for disease; one in a young woman aged 23. Dr. W. J. Thorne, of San José, describes a remarkable case of dislocation of two dorsal and three lumbar vertebræ. The subject of the accident, a miner, was struck in the region of the scapulæ by a large mass of rock while seated on a plank laid across the mouth of a pit; the plank was broken, and he fell a few feet to the bottom. When seen, the anterior curvature in the lower dorsal and lumbar regions was lost, the vertebræ bulged backwards, their spinous processes projecting under the

skin; there was complete paralysis of the lower extremities. Pressure with the hand, while the patient was recumbent, failed to reduce the deformity, but, on lifting him horizontally, supporting him under the axillæ, traction being made on the lower limbs, the pelvis and body were steadied, and steady pressure was again made over the salient vertebræ; an appreciable forward movement occurred, accompanied by a loud snapping sound, audible to the bystanders, and the deformity was found to be measurably diminished. The patient ultimately made a good recovery, although he was unable to walk for eight months. He required the catheter for five weeks: the paralysis of the lower extremities lasted eight weeks.

The volume is very creditable to its authors; it is an epitome of the recent progress in medical science, and a record of clinical observations. Like all American publications, it is admirably got up, and we trust in the future the want of funds, which the editors confess has compelled them to omit certain illustrative wood-cuts, may no longer hinder its completeness. We rejoice at these signs of professional and scientific culture in a country where practitioners have to rely to a very great extent on their knowledge and skill in competition with quackery and mysticism.

ROBERT SAUNDBY, M.D.

*A System of Volumetric Analysis.* By Dr. EMIL FLEISCHER. Translated, with notes and additions, from the Second German Edition, by M. M. Pattison Muir. London: Macmillan and Co. 1877.

We cannot congratulate the translator on his "additions", and have to express our opinion that the introduction of the complexities of the new notation into a work of this description, is quite uncalled for, and greatly impairs the usefulness of the book. The following passage concludes the author's preface.

"I have paid no attention to the so-called modern formulæ, because these, even supposing that there is a shadow of a reason for their existence, as Mohr trenchantly remarks, are peculiarly unfitted for analytical chemistry and for mineralogy."

So much for Fleischer the author. Now we turn to the translator's preface, and quote, "The author is a devoted admirer of the old system of notation; he has, however, allowed me to introduce those formulæ which are now all but universally employed by chemists. The old formulæ are placed in brackets after the new. Calculations are generally stated in terms, both of the old and new notation."

We cannot help suspecting that Dr. Fleischer will hardly be content that his text should appear afterwards in brackets, whilst the translator's notes have the first place, without brackets. But, whichever way that question may be settled between author and translator, the unfortunate reader of the English version is the sufferer; and the book, in its present form, is one of the most confused that we have ever encountered; pages upon pages being devoted to the explanation of the difference between working by the new and working by the old notation; and the strength of the solutions in some cases being made to vary, according as the one or the other is employed. An example of such variation may be found on pages 37 and 38, where it is explained in the text that a normal solution of carbonate of potash is made by dissolving 138.2 grammes of that salt in one litre of water; and, in a footnote, to the effect that in the old notation 69.1 grammes, dissolved in

a litre of water, make the normal solution. Among the many charming confusions of volumetric analysis by the new notation, is that the strength of a standard potash solution varies according to the potash compound selected. If you take caustic potash, your solution will be only half as strong as if you take the carbonate.

## NEW INVENTIONS.

### THE SILBER OIL AND GAS LIGHTS.

Up to within a few years ago the natural laws which regulate combustion were but very superficially studied, and we were content to take for granted the wicks and burners with which commerce supplied us for our oil and gas-lighting media. The union between the hydrogen and carbon of the oil, or gas and the oxygen of the atmosphere, was imperfect, because improperly apportioned to each other—the consequence being halting combustion, dull red illumination, universal smokiness, and the projection of deleterious chemical compounds into the air of the room. Means were carefully taken, it is true, to yield for the use of the flame a regular quantity of oil or gas, but the air to support combustion was supplied haphazard. Very few names appear on the roll of fame which can be indexed as having sought to improve this dark state of knowledge with regard to lamps and gaseliers, and the few who did labour in this direction went off into meandering tracks. Fortunately there has appeared in our day a pioneer who has succeeded in clearing a straight path, and who has pointed out the only way to follow if we desire to realise the full value of an artificial light. We allude to Mr. Silber, whose patient observation of the phenomenon of light, and whose indefatigable study of the laws which govern it are now almost universally known and appreciated. He has performed the part of an enchanter in our midst, and metamorphosed the blue and yellow lights of the lamp and gas-burner into a clear and delectable white flame.

Previous to the year 1774, when oxygen was discovered by Dr. Priestley, combustion was supposed to result from the presence of a certain principle named phlogiston, and thus when a wick had surrendered its red existence it was said to have been dephlogisticated. These were the dim nights of tallow candles, when the wicks were too large or too small, and when consequently the candles guttered and the fat ran down the shaft as if in haste to give it a Corinthian fluting. Even when the thickness of the candle was well adjusted to the size of the wick, there were many other drawbacks. For instance, when the charred portion of the wick was consumed, snuffers were rendered repeatedly necessary; or when left unsnuffed the black spongy mushroom-like top fell into the cup of molten tallow, and pressed out the light. These faults have been overcome and avoided of late years by the use of wax, stearine, and sperm candles, by the plaiting of the wick, by twisting it, or by winding upon each half of it a thin wire which compels the wick to divide asunder during its cremation, protrude through the flame, and so finally disappear. But after all a candle must be considered a very low type of a light, and unworthy of our century. Its dark interior still contains unburnt combustible vapour which requires a supply of oxygen to produce a full proportion of light, and the



difficulty of bringing the oxygen there is nigh insuperable.

When the lamp variety of light-yielders came to be improved and preferred to candles, the object sought for was a wick, the burning part of which should be maintained at a regular distance from the oil, and with a uniform capillarity. Many new lamps were devised to bring about this speciality, and also to remove the shadow cast from the oil fountain. The astral, the sinumbra, the fountain reservoir, and the clock-work lamp will occur to the minds of every one. But the invention of the Argand in 1789 proved the greatest advance in the direction of thorough combustion—which after all is the important matter—and by this arrangement the flame was surrounded by two concentric currents of air. This form of lamp was, however, until but lately open to certain objections. For example, when the wick was raised in order to increase the flame, the supply of air not being sufficient for the combustion of the oil, much of the carbon of the latter passed off in eye-smarting smoke. When the wick was lowered, also to suit the supply of air, the flame dwindled down to utter uselessness. The application of the chimney in order to create an artificial draught, by enclosing both the inner and outer supplies of air, checked the rush of cold air upon the column of flame, and improved the yield of light, and it besides removed for the most part its unsteadiness and flickering.

For many years the Argand lamp remained pretty much as when it left its inventor's hands, and not until lately has it received the attention which it deserved as an approach in the right direction. Mr. Silber's improved Argand must now be pronounced the only lamp of this kind which satisfies the requirements of science. This lamp not only admits a just sufficiency of air to the flame, but the air is better warmed before it impinges. He causes this warm current of air to flow to the bottom part of the flame, where it is most required, and directs also a current of air to the central part of the burner, which supplies the necessary quantity of atmospheric oxygen to the upper part of the flame.

This uniform blending of the air with each part of the flame results in rendering it pure and white, and very considerably lessens the blue colour which is significant of waste, and which is very plainly visible at the base of all imperfect lights. The creation and the maintenance of this white light—not yellow light—is a proof of perfect combustion. The uniformity of pure light in the Silber Argand is due to an inner narrow tube of metal, open at top and bottom, which has been duly proportioned after immense care, and which when placed in the centre of the burner directs continuously the requisite air-draught to all parts of the flame. If this simple tube be taken out, the old-fashioned poor and trembling light which formerly so troubled and annoyed us becomes visible, but when dropped again into the ring of light the full and improved flame instantly beams upon the beholder.

Thanks to Mr. Silber and his persistent experiments with the Argand lamp, it is now possible to burn colza oil or petroleum without undergoing any of the inconveniences which formerly attended their use. The wicks, for example, do not touch the metal tubes inside and around them, and in consequence of this the oils are fairly volatilised, and do not quickly consume the wick within the vapour walls. When oil was used in former times, the wicks required constant trimming, which proved a nuisance

of the first order to all students. Now a wick will last for weeks without any more trouble than merely giving it a light brush over with the finger previous to lighting it. There is also an enhanced yield of light from the use of these improved burners without any increase in the consumption of oil. Any kind of mineral, vegetable, or animal oil can be used with them; but petroleum and colza, which have been the most experimented upon, are preferred by the inventor. Fortunately it has been proved that there is no detrimental effect produced by the burning of properly purified mineral oils, and that if thorough combustion be achieved, there will be neither smoke nor odour. This smell was especially noticeable in the common paraffin oil lamps, and was due to imperfect combustion—some portion of the oil had, in fact, passed in the form of incompletely burnt vapour through the outer zone of the flame. In the Silber lamp a thorough combustion is brought about by a completer vaporisation of the oil before it is finally consumed. It is pleasant, too, for us to know that a better light can be obtained from a mineral oil lamp of this description than from coal gas, and also that it is at least 40 per cent. cheaper. There will always be those who will prefer lamps to gas burners, just as there ever will be those who will eschew hard water for filtered rain water. Above all, there can be no risk from explosion, because no air can mix with the petroleum vapour before it issues from the wick-case. An Argand gas burner, constructed upon the Silber principle, combines all the advantages of the Silber burners for mineral and vegetable oils; and chief among the results obtained by their use is relief from the vitiated atmosphere so noticeable where ordinary gas burners are used. This is easily understood when it is explained that the Silber gas burners give off nothing which can be in the least injurious, whilst ordinary gas burners load the air with partially consumed carbon, and other deleterious compounds, injurious alike to health, plants, and furniture.

The boon which is bestowed by this invention upon the owners of country houses where there is no gas is difficult to assess. In the Silber Light Company's offices, in Whitecross-street, London, for instance, petroleum is distributed in the different rooms by means of pipes leading from a small oil tank above. The distributing apparatus required is simplicity itself, and by its means a hundred burners can be supplied on the same level as easily as two or three. And the advantage of having a pure oil light in conservatories of exotic flowers, in picture galleries, in nurseries of children, and in infirmaries bedrooms is a thing which needs no argument. The disadvantages of home-made, and consequently impure, coal gas is equally self-evident.

#### SILPHIUM CYRENAICUM.

The silphium Cyrenaicum, a plant growing in Barbary, especially in the neighbourhood of the ancient Cyrene, from which it derives its name, was much valued as a remedial agent by the ancients; and its properties, real or supposed, were commented on by Dioscorides, Strabo, and other old writers. For many centuries, however, it has fallen into oblivion; but within the last twenty years, through the exertions of the late Dr. Laval, the attention of the medical profession in France has been directed to its use, especially in diseases of the throat and chest, in which it is said to be of much value.

It is imported by MM. Derode and Deffès of Paris, who make the following preparations: 1.

Yellow granules containing 5 centigrammes (0.77 grains) of the extract; 2. Pink granules, containing 25 milligrammes (0.385 grain); 3. A tincture; 4. Powder. The English agents for the sale of silphium are Messrs. Burgoyne, Burbidges, and Co., of Coleman Street.

The drug is one which merits careful investigation as to its remedial power.

### HYPNOPOIETICA.

This preparation of opium, by J. Richardson & Co. of Leicester, is stated not to produce headache, stupor, or constipation, as ordinary preparations of opium do. After an extensive trial, we can say that hypnopoietica has no very disagreeable taste. It produces sleep in about the same dose as tinctura opii. It does not produce headache or marked constipation. It will relieve headache where opium will not. It is an useful and elegant preparation of opium.

### COLLINS' HISTOLOGICAL MICROSCOPE.

Our English makers are now turning their attention to the production of histological microscopes for students, which shall combine the advantages of the continental models in respect to convenience and cheapness, with the characteristic merits of the English workmanship. Collins' (157, Great Portland Street) new histological microscope sells at £5 10s., with rack adjustment and fine adjustment delicate enough for the highest power, with concave mirror, one inch and quarter-inch objectives, and mahogany case. It is short, as in the Nachet and Hartnack model, but with a wider tube and larger field; the fine adjustment is novel, and particularly steady, being capable only of vertical movement. The objectives are excellent, the quarter-inch being especially remarkable for good definition and penetration.

### RECENT ITALIAN WORKS.

- Corso Dott. Francesco. Influenza della nicotina sopra l'organismo animale. Firenze, 1877.  
 Castellani Dott. Vincenzo. Cenni di una epidemia di febbri tifoidee—di una epidemia di miliare—dell' angina differica; osservate nel Fitto di Cecina (Prov. di Pisa), negli anni 1874 al 1876. Bologna, 1877.  
 Macari Prof. Francesco. Compendio di ostetricia, ginecologia e pediatria: un vol. in 8 figure intercalate nel testo. Modena, Società tipografica, 1877. Prezzo L. 10.  
 Massei Dott. Ferdinando. Sulle laringiti pseudo-membranose. Due lezioni redatte dal Dott. Pietro Masucci. Napoli, 1877.  
 Mazziotti Dott. Giuseppe. Aneurisma spontaneo della poplitea dritta guarita con la flessione forzata della gamba (Dal Morgagni, fasc. di agosto e settembre 1877). Napoli.  
 Morselli Dott. Enrico. Contribuzioni alla psicologia dell' uomo delinquente, ec. Dalla (*Riv. di Fren. e Med. leg.*, An. III, fasc. 2°). Reggio Emilia.  
 Parrini Dott. C. Di un caso di spermatocoele intravaginale; storia clinica e considerazioni. Pisa, 1877.  
 Stroppa Dott. Cesare. Rendiconto clinico riguardante la sezione chirurgica dell' Ospedale civile di Cologno. Ivi, 1877.  
 Tassi Dott. Emidio. Studi di anatomia patologica e clinici sulle malattie delle ossa. Roma, 1877.  
 Vigna Dott. Cesare. Rendiconto statistico del frenocomio centrale femminile di S. Clemente per gli anni 1872-75-76. Venezia, 1877.

### MISCELLANY.

#### A SURGICAL INSTRUMENT FACTORY.

We had lately an opportunity of inspecting the establishment and works of Messrs. Maw, Son, and Thompson, of Aldersgate Street. The business they carry on as makers of surgical instruments, and

manufacturers of all surgical and medical appliances necessary in hospital and private practice, and for the fitting up of hospitals and dispensaries, is probably the largest in the world. The premises which they have erected, and which are still in course of completion, are in many respects models of what such works should be; and the whole establishment is one which will well repay a visit, both for the excellence and remarkably moderate prices of the articles made, and for the perfection with which the details of manufacture are carried out. The business was originated by Mr. George Maw—the grandfather of the present Mr. Charles Maw—early in this century. Its present extension is due no less to the confidence inspired by the sound principles on which its operations are conducted, than to the enterprise which has been evinced in employing a large capital in the business, and the excellent powers of organisation manifested throughout the establishment. The total number of persons employed here exceeds three hundred; sixty mechanics, many of them most highly skilled, and in receipt of considerable salaries, are employed in making surgical instruments of every kind, including the most delicate and minute instruments for ophthalmic and very delicate operations. It will give some idea of the extent of the operations of this house, if we mention that forty packers are constantly employed in the packing-room, and fifty clerks are at work in the counting-house. The premises occupy about fourteen thousand superficial feet, and have been built by Mr. Charles Maw, from the designs of the architect, Mr. Henry B. Garling. The elevation is very handsome, and the rooms and workshops are spacious, well-lighted, and extremely well ventilated; the sanitary arrangements are deserving of all praise. It is very rarely that in any commercial premises one finds the lavatories and other dependencies so carefully designed, so beautifully clean, so thoroughly well lit; indeed, the health and comfort of the *employés* of this house are very well studied, and in the workshops we saw men who had been upwards of thirty years in the employment of the firm. A lift traverses the whole building, and this, together with the machinery, is worked by a steam engine, of which the boiler is heated by gas. Some knowledge of the extent of the stock may be gathered, if we mention that in the sponge-room alone are 700 cases of sponges in stock, each case varying from £3 to £20 in value. Of articles such as trusses and enema-apparatus, the average sale per week is something surprising. The prices of some of these strike us as being very noteworthy. This firm are the original makers of the India-rubber double-tube split enema apparatus, known as Higginson's, and which has since been pirated and patented in America. Looking over the stock of gum-elastic catheters, of extremely fine quality, we find that they are sold at from 8s. to 24s. per dozen, whilst the black elastic bougies and catheters, which are of the very best quality, and indeed far excel those which are imported from France, are sold at from 15s. to 42s. There are five stories to the warehouse, devoted to different departments. On the ground floor is the surgical department; on the second floor, druggist's sundries; on the third, sponges. We inspected carefully the surgical instruments, and saw with satisfaction that an amount of care is bestowed upon their manufacture, and a liberality in wages, material, and the selection of good workmen, which insures great excellence in the articles produced. Below are seen the finished articles; and upstairs in the workshops,



and in the adjoining factory at Hare Court, they will be seen passing through every stage and nature of manufacture. Among the instruments which we inspected, we noticed particularly the excellence of the lithotrites, of which every model is kept, and which are carefully tested before any are allowed to go out. Here are all the models of the aspirator; one known as Maw's aspirator being priced as low as 25s.: the instruments are of the choicest quality. Among the novelties we saw Clover's double-channel catheter in vulcanite; Teevan's very convenient new sound, with narrow stem; a very well arranged set of silver catheters, of excellent pattern, upon a plan of Mr. Wagstaff's; all the forms of Spencer Wells' clamps; a completely fitted Barnes' obstetrical bag; Durham's right-angled tracheotomy tube, with lobster-tail cannula; Southey's fine cannula, for continued use in dropsy of the extremities; and Sayre's tripod and suspension apparatus for treatment of spinal curvature. Thus we have all the varieties which indicate how completely this firm keeps pace with the progress and improvement in surgical instruments of the day. Their galvanic batteries, which are also made on the premises, are of excellent construction and workmanship. A special workshop is set apart for those who are engaged in the finishing process; and the factory in Hare Court is largely occupied in the making of enema apparatus, and all sorts of turned work; the perfection of the finer work in the bells, taps, and joints of the metal apparatus was very noticeable. Nothing could be more perfect than the finish of some of the enema apparatus, medical and veterinary. Altogether, this establishment is one of the most interesting and extensive which exists to supply the wants of the medical profession, and is equally remarkable for the extent of its organisation, and for the liberality and completeness with which all the details are carried out.

**DEATH OF M. BOUVIER.**—The Académie de Médecine has recently lost one of its oldest and most zealous members in the person of M. Bouvier, of the Section of Anatomy and Physiology. M. Bouvier, who had almost entirely lost his sight, was walking in the Tuilleries Gardens, and going too near the great basin, fell into it. Although he was immediately rescued, the fright and cold induced pulmonary congestion, to which he succumbed a few hours afterwards. He was born in 1799, and was elected into the Academy in 1839. His works on Orthopædics created for him a very honourable reputation, which in 1837 was acknowledged by the Académie des Sciences conferring on him a prize of 6000 francs.

**SCIENTIFIC GRANTS OF THE BRITISH MEDICAL ASSOCIATION.**—The following grants in aid of researches have been made this year by the Committee of Council of the British Medical Association on the report of the Scientific Grants Committee:—Mr. Gaskell, in aid of a research on the reflex action of the vascular system and muscles and reflex vaso-motor action generally, £30; Mr. Langley, in aid of a research on the changes produced in the salivary glands by nerve influence, £25; Dr. Rutherford, F.R.S., for a continued research on the action of cholagogues, £50; Drs. Braidwood and Vacher, for engravings for illustrating the third report on the life history of contagium, £40; Mr. Pye, in aid of a continued research for the investigation of the relation that the retinal circulation bears to that of the brain, £8 15s.; Mr. Bruce Clarke, in aid of a continued research on syncope and shock, £10; Mr. A. S. Lee, Heidelberg, in aid of a research on the quantitative determination of digestive products obtained by the action of pancreatic ferment upon the various albumens, £25; Dr. McKendrick, Glasgow, in aid of a continued research into the antagonism of drugs, £30, also in aid of an investigation into the dialysis of blood (renewed), £10; Dr. John

Barlow, Muirhead Demonstrator of Physiology, Glasgow, in aid of an experimental investigation into the changes produced in the blood-vessels by alcohol, £10; Dr. Joseph Coats, Dr. McKendrick, and Mr. Ramsay, a committee upon the investigation of anæsthetics, £50; Dr. McKenzie, a research on pyæmia, £25; Mr. Callender, F.R.S., Dr. J. Burdon Sanderson, F.R.S., Dr. T. Lauder Brunton, F.R.S., and Mr. Ernest Hart, a committee appointed for the investigation of the pathology and treatment of hydrophobia, £100. Total, £413 15s.

**APPOINTMENTS IN THE ITALIAN UNIVERSITIES.**—The following nominations have been made by the Council of Public Instruction in Italy: Dr. Carlo De Vincentis, to be extraordinary professor of Ophthalmic Surgery in the University of Palermo; Professor Pietro Burrelli of Siena, to be professor of Pathology and Clinical Medicine in Turin; Dr. Enrico Bottini of Turin, to be professor of Surgical Pathology and Operative Surgery in the University of Pavia; and Professor Durante of Rome, to be professor of Surgical Pathology and Practical Surgery in the University of Catania.

**THE RAIN TREE.**—The consul of the United States of Columbia in the department of Loreto, says *L'Union Médicale*, has written to President Prado, giving some curious details concerning a tree which grows in the forests in the neighbourhood of the town of Magobamba. This tree, called by the natives *Tamai cpsi* (*arbre à pluie*) is possessed of remarkable properties. It is about twenty yards in height when it has attained its full growth, and the diameter of the base of its trunk is about thirty-nine inches. The tree absorbs and condenses with rapidity the moisture of the atmosphere, and water is seen to trickle continually from its trunk and to fall like rain from its branches, and in such abundance as to transform the soil about it into a veritable marsh. The tree possesses this property in its highest degree during the season of the year when the rivers are low and water is scarce; so that the consul of Loreto proposes to plant the tree in the arid regions of Peru for the benefit of agriculturists.

**AN ELECTRIC PLANT.**—The *Horticultural Gazette* of Nicaragua publishes some statements regarding a plant of the family of the *Phytolaccaceæ*, which grows in that country, and possesses electro-magnetic properties. When one touches the twig of the plant, the hand receives as vivid a shock as from a Ruhmkorff battery. The reporter, surprised at the phenomenon, made some experiments with a small compass. Seven or eight paces off the influence of the plant made itself felt. The deviation of the compass-needle was in proportion to the distance; the nearer it was brought the more marked the movements became, and when the instrument was placed in the middle of the bush the movements were changed into a rapid rotation. The subjacent soil did not contain any iron or other magnetic mineral. There was not any doubt that the electric quality resided in the plant itself. The intensity of the phenomenon varied with the time of day. At night, it was scarcely perceptible; at two o'clock P.M., it attained its maximum. During a thunderstorm its power was increased, but when it rained the plant faded. The reporter has never seen birds perch nor insects light upon the *Phytolacca electrica*.

WE (*Boston Medical Journal*) see in a recent exchange that Proska succeeded in quickly replacing two strangulated herniæ by injecting several litres of water into the rectum by means of a syringe. In the first case, all the other means of reduction had failed.—E. Krull used the following treatment with success in eleven cases of icterus catarrhalis, some of which had been treated for a long time with the ordinary means without a good result. The rectum was injected once a day with water at a temperature, first of 59 deg. F., later increasing to 72.5 deg. F., by means of a syringe. From one to two litres of water were used, according to the sensations of the patient. In no case were more than seven such injections needed. Senator has also confirmed the method of treatment.





